Sec 31

SEPTEMBER 16, 1944

Railway Age

Founded in 1856

94% Availability

THE LIBRARY OF CONGRESS SERIAL RECORD
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GIFT

THROUGH EIGHT YEARS

THE nearly 800 General Motors Diesel Locomotives of 600 to 2000 Hp., which have been placed in railroad yard and transfer service since 1936, have rolled up over 20 million hours of service with an average availability of 94 percent . . . This high availability record is a true yardstick of locomotive dependability. It is the direct result of correct design, well-balanced engineering, proper maintenance and the long established nationwide day-and-night parts service to support all users of General Motors Locomotives.

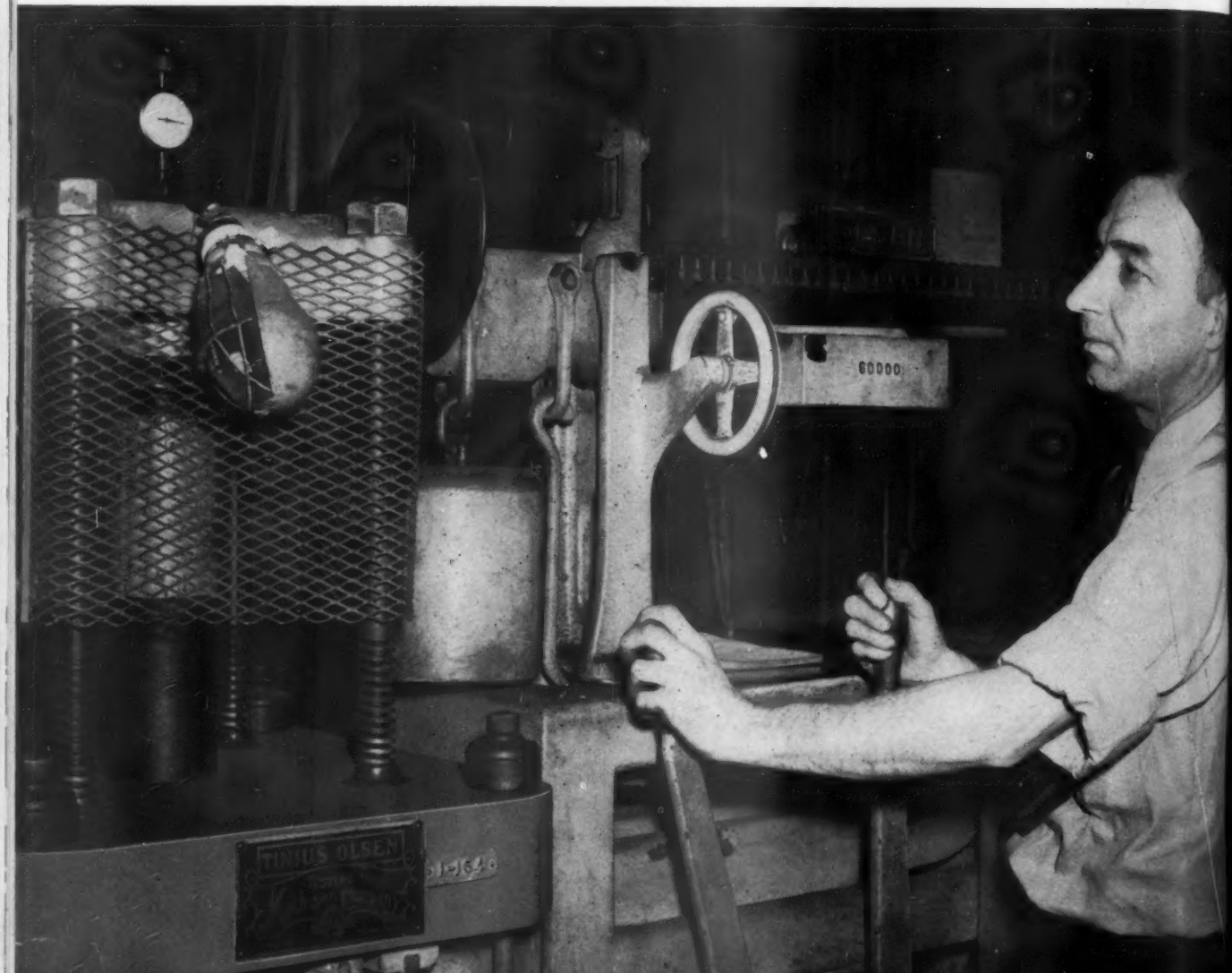
★ *BACK THE INVASIONS—BUY MORE WAR BONDS* ★

GENERAL MOTORS LOCOMOTIVES

ELECTRO-MOTIVE DIVISION
GENERAL MOTORS CORPORATION — LA GRANGE, ILLINOIS, U.S.A.

Reliance **HY-CROME** *Spring Washers*

ACTUAL TESTS *Develop* THE BEST



"Tension There In Spite of Wear"

LOCOMOTIVE
HY-CROME

- Developing the desirable features of a product is the duty of any testi laboratory—discovering its weak points is more important. The use information from field and service tests is the basis for research work.
- Weak po nts are thus strengthened and des rable features improved. T testing engineer's patient and persistent experiments pave the way f fabricating a better product and provide improved serviceability.
- Continuously striving for improvement in **HY-CROME SPRING WASHE** to meet new service demands as they arise we developed various members the **HY-CROME** family — all milestones of **HY-CROME SPRING WASH** progress.

STANDARD HY-CROME—HY-PRESSURE HY-CROME—HY-CROME PRESSURE SPRI
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CROSSING HY-CROME LOCOMOTIVE HY-CROME

EATON MANUFACTURING CO. RELIANCE SPRING WASHER DIVISION, MASSILLON, OHIO

Design—

For Workability With Inland Steel

Steel offers designers and manufacturers the maximum in workability. It can be formed and fabricated by all practical production methods, keeping shop costs down. It can be formed either hot or cold. It can be easily spun or extruded into many useful shapes. Steel can be deep drawn to such extremes as in the manufacture of steel cartridge cases. It can be machined, sheared, bent, seamed, welded, and brazed. And steel is available in extreme ranges of sizes and shapes, and chemical analyses; this offers a wide scope in the design of parts, and also simplifies shop procedure, reducing wastage to the minimum.

For half a century Inland has been studying the needs of industry, working with designers and production men, to make steel more useful—to give it the workability that simplifies production and assures economical fabrication. From such close contact with field problems, Inland has given industry Ledloy, the lead bearing, faster machining steel—Hi-Steel, the low alloy, high strength steel of exceptional workability—Form-Cote, the galvanized sheet which withstands severe forming—Paint-Tite, the specially treated galvanized sheet to which paint and enamel readily adhere—and many other kinds of steel that offer numerous advantages to the designer, the production man and the consumer.

Inland engineers and metallurgists are at your service to help you design, select steel, and fabricate products for today or for the post-war period.

INLAND STEEL COMPANY

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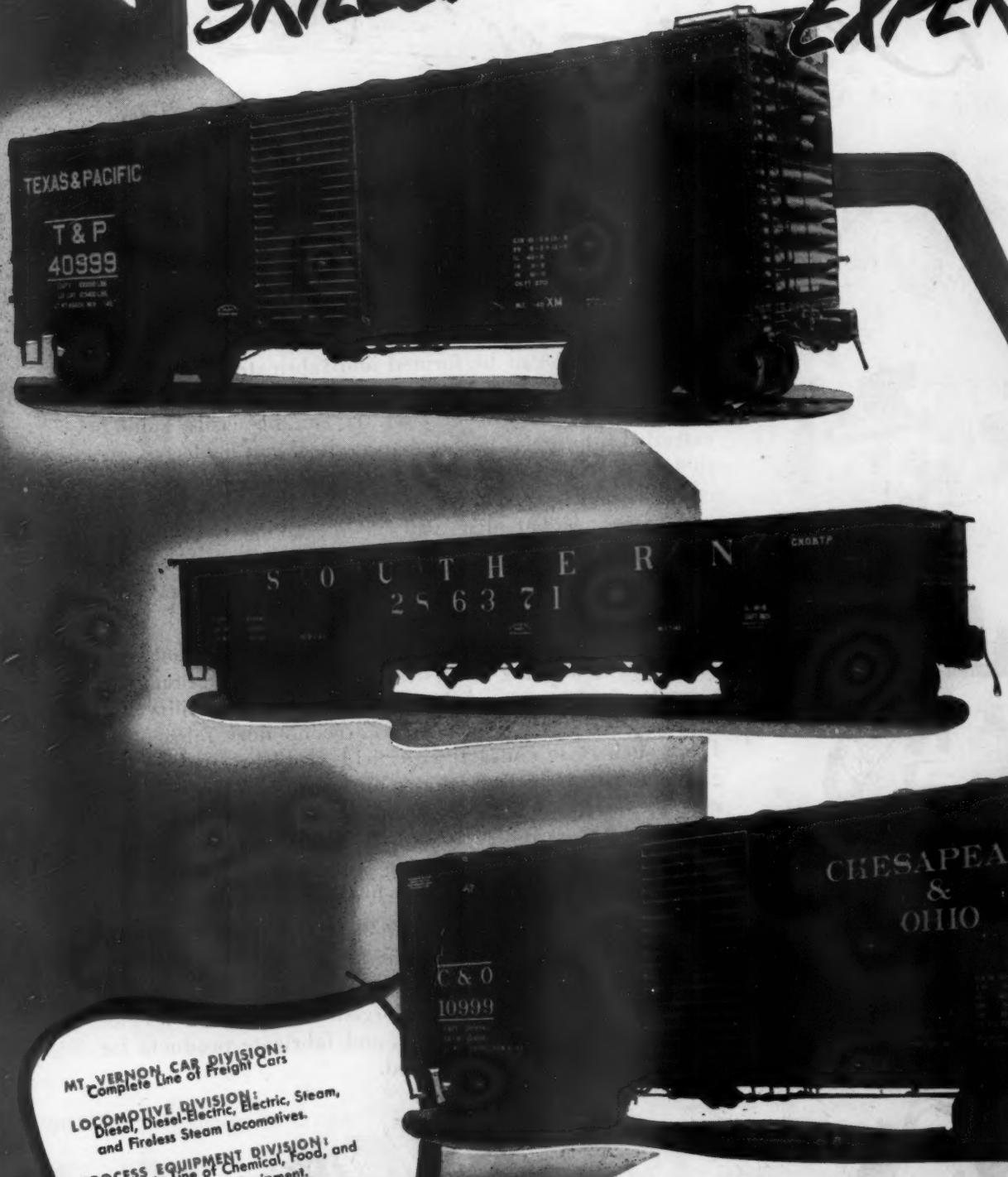
SKILLED WORKMANSHIP—EXPERT SU



MT. VERNON CAR DIVISION: Complete Line of Freight Cars

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SUPERVISION— MODERN EQUIPMENT—

..these are the factors that account for the extra measure of endurance built into

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"Better Built" Equipment
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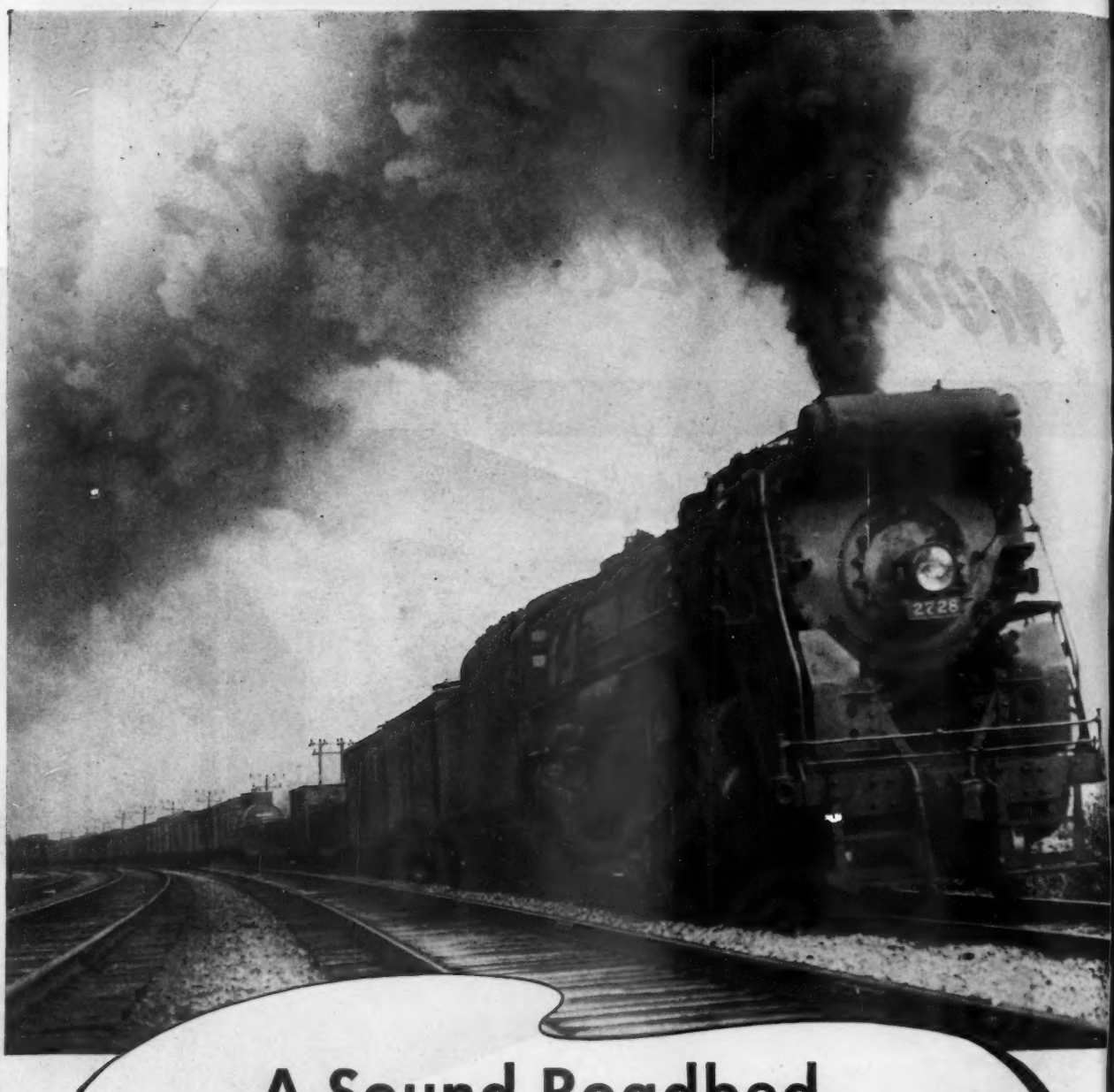

A Sound Roadbed
is a Foundation for
Efficient Operation
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Published weekly by Simmons-Boardman Publishing Corporation, 1309 Noble Street, Philadelphia, Pa. Entered as second class matter, January 4, 193[illegible] at the Post Office at Philadelphia, Pa., under the act of March 3, 1879. Subscription price $6.00 for one year U. S. and Canada. Single copies, 2[illegible] cents each. Vol. 117, No. 12.

. . IS AVAILABLE FOR TRUCKS AND TRAILERS

Yes, you can again build lightweight aluminum truck and trailer bodies. And metal is available for reconditioning those prewar jobs that have been worked so hard all during the war. W.P.B. now permits the use of aluminum for these important purposes.

The lighter weight of aluminum bodies means that, for equal loadings on power plants, tires and brakes, trucks and trailers carry more weight. These greater payloads result in fewer trips to deliver an equal amount of goods. You save on manpower, reduce operating expenses, and fewer pieces of equipment are required.

The sturdiness of aluminum construction, coupled with the corrosion-resisting ability of aluminum, means less manpower is needed for upkeep. Its fine appearance is a morale and business builder.

Aluminum sheet for siding, special extruded shapes for body work, are in Alcoa's distributors' stockrooms, ready for your requisition. Perhaps you can't get the large size sheets you're accustomed to working with, but take the smaller sheets. Aluminum bolts and rivets are in stock for assembly work.

Send for the new booklet listing the Alcoa Aluminum sheet, shapes and fittings in stock. Then, you can proceed with that design job. Write ALUMINUM COMPANY OF AMERICA, 2178 Gulf Building, Pittsburgh 19, Pennsylvania.

ALCOA ALUMINUM

Car Lighting

Air-Conditioning

Exides powerfully carry the double load

Exide Batteries ably handle the big power loads needed to keep lights bright and compressors working efficiently. They do this steadily day after day—night after night—even during long stops. High voltage is consistently maintained because Exides are designed to give maximum output under the heaviest demands.

With passenger traffic at its highest peak, and strain on equipment exceptionally severe, the need for battery efficiency and economy assumes major importance. Railroad men have learned through long experience that when Exides carry the double load of car lighting and air-conditioning, they can count on thorough dependability, long-life and ease of maintenance. They know that when they buy an Exide, they *Buy to Last.* By taking care of it, they *Save to Win.*

ARMY E NAVY

Exide BATTERIES

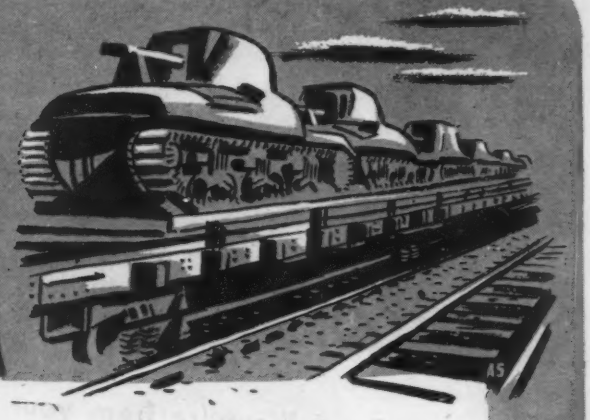
THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia 32

Exide Batteries of Canada, Limited, Toronto

high speed and safety are attained with the

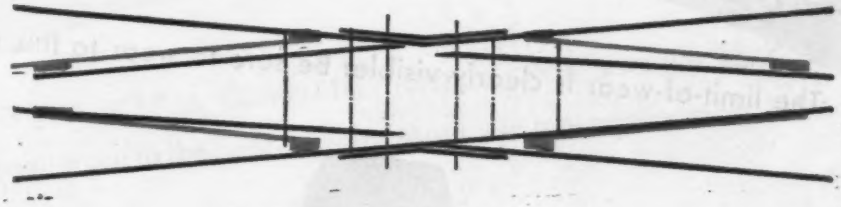
RACOR

Movable Point Crossing Brace Rail Design . . .



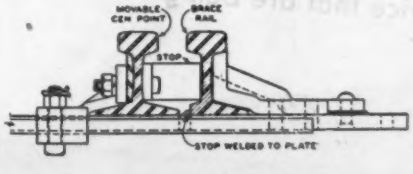
WAR can't WAIT

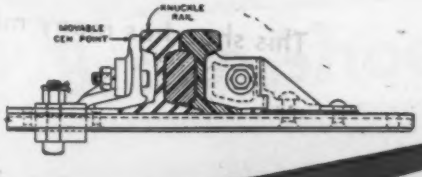
Men and materials are constantly moving over the railroads of the nation and the tracks are taking a terrible pounding. Long trains running day and night subject the flexible portions of the movable points to heavy shock. The Racor Movable Center Point Crossing Brace Rail is designed to help these points stand up under the pounding.



FEATURES OF THE RACOR MOVABLE POINT BRACE RAIL

1. The brace rails provide lateral support for the flexible portion of the movable points the same as provided by stock rails in ordinary switches.
2. Ties the entire crossing into one unit.
3. Renders other anti-creeper arrangements unnecessary.
4. Ruggedness of the structure guarantees economy by lower maintenance costs, especially at the heel joints.
5. Improved alignment and surface for movable center points permit high speed operation with safety.





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AMERICAN Brake Shoe COMPANY

3781

Brake Shoes should be worn

Get full service from your brake shoes. Do not remove them until they are worn to the limit-of-wear mark. To take them off sooner is a waste of material and time.

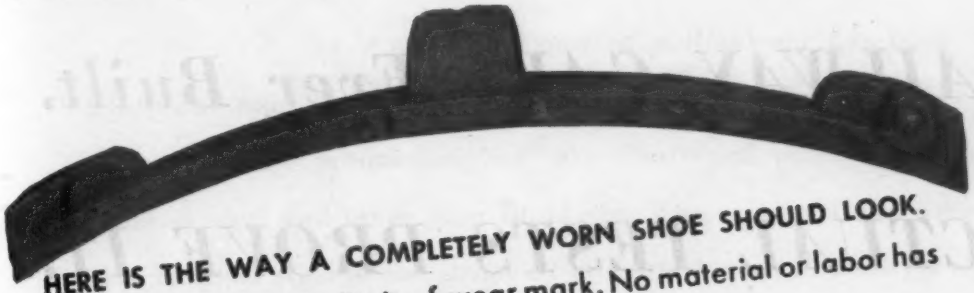
The limit-of-wear is clearly visible. Be sure to wear to this mark.

Do not remove partially worn brake shoes. This shoe has many miles of service that are being thrown away.

Wear all Brake Shoes to the

to the *Limit...*

Do not remove cracked shoes until they have been worn to the limit-of-wear mark. The steel back holds the wearable metal in its place for full-wear duty.



HERE IS THE WAY A COMPLETELY WORN SHOE SHOULD LOOK. It has been worn to the limit-of-wear mark. No material or labor has been wasted.

Watch your brake shoe scrap pile for partially worn brake shoes. If you find any, return them to service. Instruct all concerned to avoid this wastage.

AMERICAN
Brake Shoe
COMPANY

BRAKE SHOE AND CASTINGS DIVISION
230 Park Avenue, New York 17, N. Y.

Limit-of-Wear **mark**

3783

STAINLESS STEEL Cars of BUDD Construction Are the Strongest RAILWAY CARS Ever Built. ACTUAL TESTS PROVE IT.

• **The Budd Test Plant is a building constructed especially for the testing of railway cars and structures. Equipped with hydraulic rams and jacks, it can handle an 88-foot passenger car like a child's toy. It is capable of crushing a complete car or testing to capacity any structural part. Plant and equipment cost a quarter million dollars. There is no other like it anywhere.**

• **When you test a railway car or any part of it in this huge machine, you know exactly what it will stand. Tremendous pres-**

sures can be applied from every direction, lengthwise, sidewise, top, middle and bottom. Stresses are measured by gauges. Tensile properties, shear value, modulus of elasticity, resistance to impact—engineering terms are reduced here to the simple question of how much force can be applied before something gives way.

• We know, for instance, that the stainless steel center sill of a Budd car will take an end pressure of 1,400,000 pounds without damage. We have done it. This far exceeds the 800,000 pounds set as a standard by the A.A.R. and the U. S. Mail Service.

• Every structural part of a Budd car has been tested. Every one must show strength far beyond accepted standards before it is approved for production. We have also tested other materials than stainless steel and other than Budd cars. *The original Budd conclusion that stainless steel is the strongest and safest metal suitable for car construction has been proved again and again by tests with this equipment.*

• We shall be glad to put the Budd Test Plant at the disposal of any railroad or of any car manufacturer who wishes to use it for tests of his own product.

EDWARD G. BUDD MANUFACTURING COMPANY

PHILADELPHIA • DETROIT

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Budd

On New York Central's

7 Alco-G.E. diesel-electrics release 11 steamers — save $116,000 in eight months!

SMOKE ABATEMENT around Albany station is noticeable because the diesel-electrics handle all the station switching of the Central and the B. & A., between their trips up the grade.

"In less than four years, all seven of these Alco-G.E. diesel-electrics will have paid for themselves out of savings."

Karl A. Borntrager, Division Superintendent, New York Central.

THE stiffest grade on New York Central's main line is the two-and-one-half-mile section from Albany west. Seven 1000-hp Alco-G.E. diesel-electrics have reduced motive-power requirements 36 per cent. They've done this because of their 95 per-cent availability and 69,000 pounds of starting tractive effort.

Before these diesel-electrics were placed in service, two steam pushers were required to help every train of more than 13 cars over the 1.75 per-cent grade. Now, one diesel-electric does it.

Their operating cost, per locomotive-hour, is less than half that of the 11 steamers they released—producing savings at the rate of $175,000 a year.

No less important is the relief these diesel-electrics have given to the heavily burdened Rensselaer terminal where the steamers were refueled and serviced every day. In 20 minutes, every third day, the diesel-electrics are refueled; in eight hours, once a month, they are completely serviced and inspected. That's why 25 per-cent fewer locomotive-hours are now required to handle the same work as the steamers handled a year ago.

These low-cost locomotive-hours will help the New York Central meet the return of peacetime competition.

Are you making similar preparations? Take advantage of our 150 years of combined railroad experience. We build all three types of motive power—diesel-electric, electric, and steam—and can, therefore, recommend the one which is economically best suited to your operation.

Alco DIESEL-ELECTRIC

GE

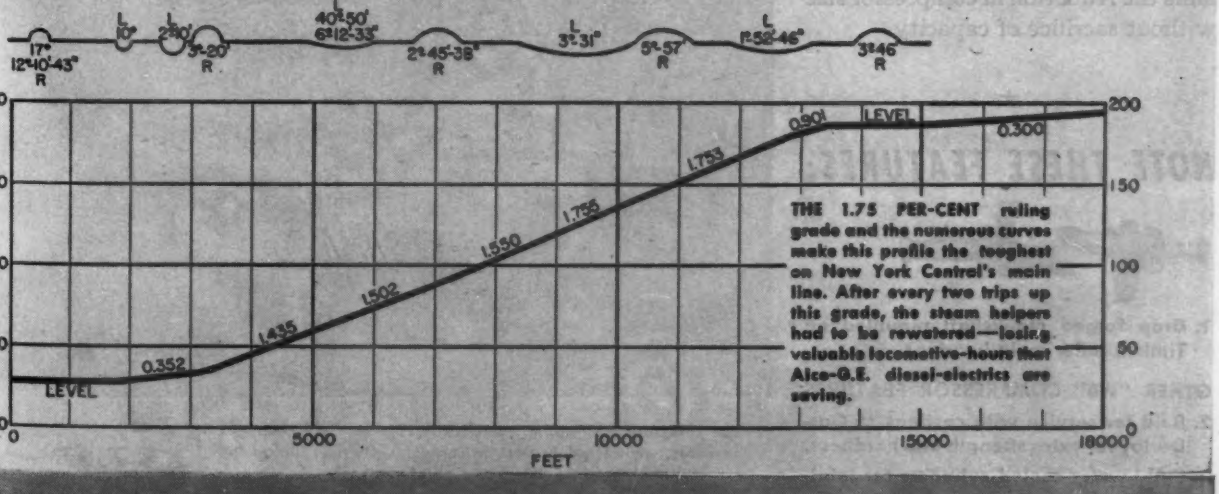
AMERICAN LOCOMOTIVE

Stiffest Grade . . .

THE SMOOTH POWER of a diesel-electric is always available to help the Central's crack trains out of the station on schedule.

ONE DIESEL-ELECTRIC provides smoother power than the two steam pushers that were previously required to help all trains of more than 13 cars over the grade.

AT THE TOP OF THE GRADE IN 8 MINUTES, a diesel-electric uncouples itself from the westbound train. Diesel-electrics meet this schedule more regularly than the steamers did.

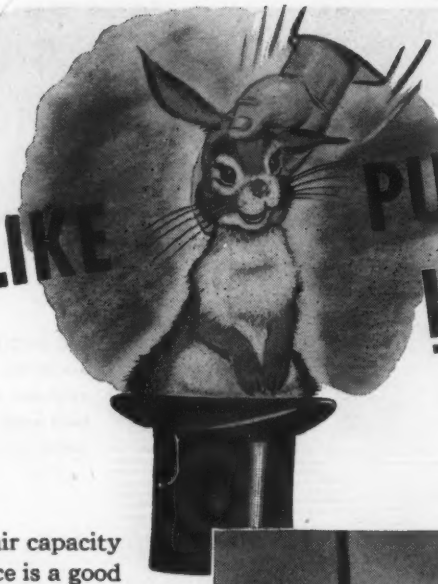


THE 1.75 PER-CENT ruling grade and the numerous curves make this profile the toughest on New York Central's main line. After every two trips up this grade, the steam helpers had to be rewatered—losing valuable locomotive-hours that Alco-G.E. diesel-electrics are saving.

and GENERAL ELECTRIC

113-90-3580

BUY WAR BONDS

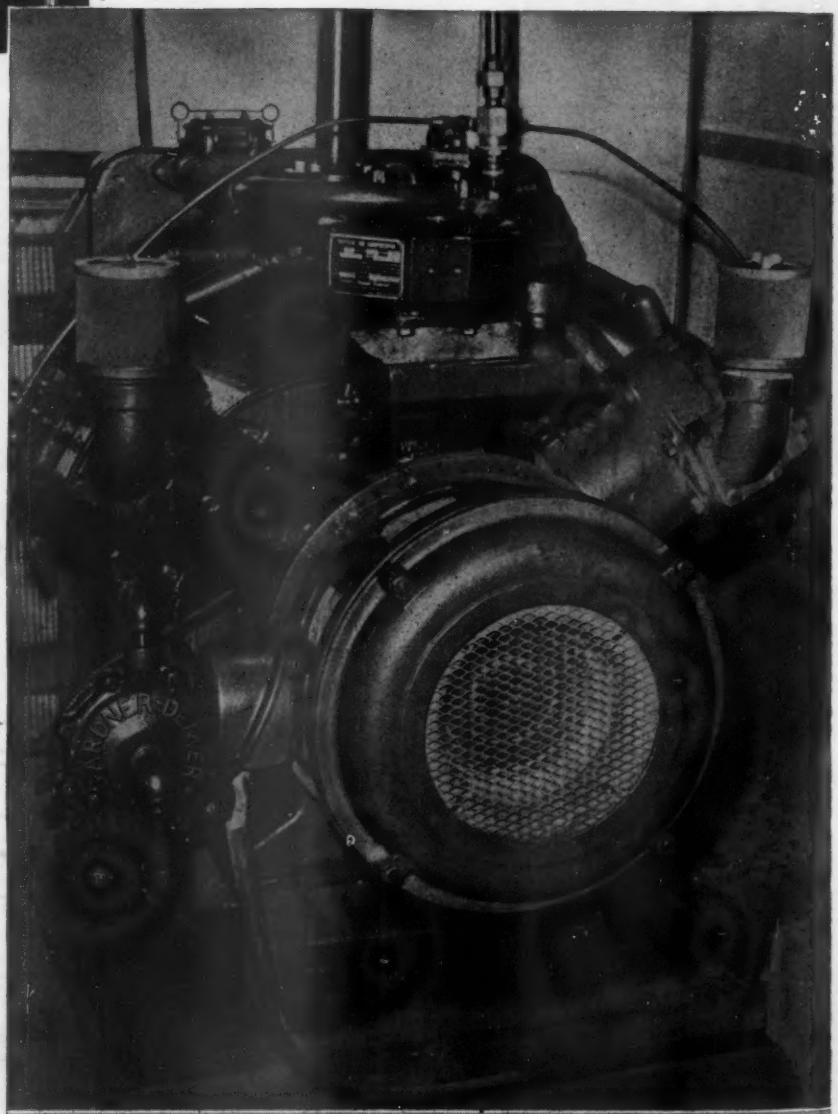


...LIKE PUTTING RABBITS INTO A HAT

SQUEEZING large air capacity into a small space is a good deal like putting rabbits *into* a hat.

Yet, that's exactly what Gardner-Denver engineers accomplished in designing their "WB" Vertical Two-Stage Compressors. Able to fit into a space only 5 feet square, these efficient compressors have an air output comparable to that of large two-stage Horizontal Compressors. They permit valuable savings in floor space that eliminate the necessity of re-arranging crowded plant floors to accommodate them.

Distinctively designed, the "WB" uses two low pressure cylinders in conjunction with each high pressure cylinder. This construction permits the use of small, lightweight pistons in all cylinders, considerably reducing the inertia load and making possible the reduction in compressor size without sacrifice of capacity.



★

NOTE THESE FEATURES:

1. **Drop forged crankshaft mounted on Timken roller main bearings.**

OTHER "WB" COMPRESSOR FEATURES

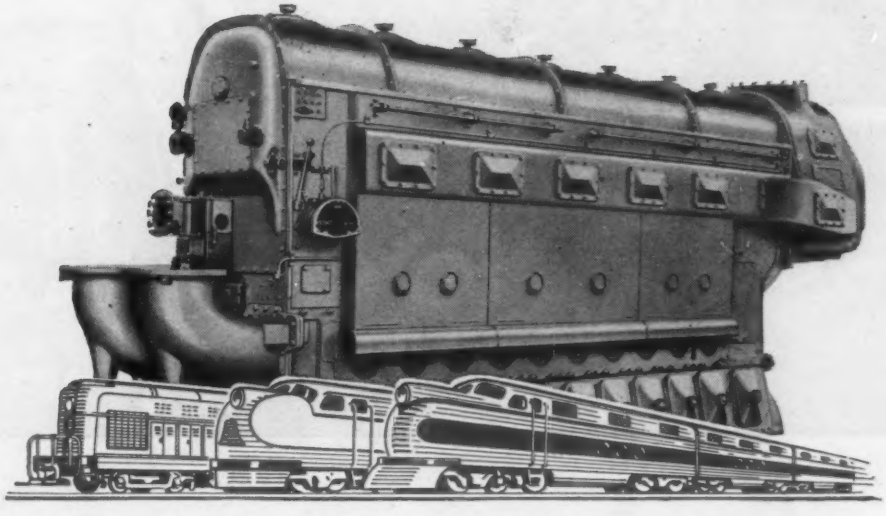
2. **Built for service with castings of Gar-Durloy for extra strength and hardness.**
3. **Fully water-cooled cylinders for lubrication oil economy and lower discharge temperatures.**
4. **"Cushioned" Duo-plate valves are silent . . . assure maximum efficiency and lowest power consumption.**

For complete information on Gardner-Denver "WB" compressors, write Gardner-Denver Company, Quincy, Illinois.

GARDNER-DENVER

Since 1859

Close to *Perfection*



In building Diesel engines, as in breeding animals, the longer wise selection continues, the closer perfection is approached. That's why it is significant to railroad men that:

1. Fairbanks-Morse has built Diesels for more than 30 years . . . has more than five million horsepower in service.

2. The first of the opposed-piston Diesels which power Fairbanks-Morse Locomotives was conceived ten years ago . . . now has more than two million horsepower of descendants in active service.

Fairbanks, Morse & Co., Fairbanks-Morse Building, Chicago 5, Illinois.

BUY WAR BONDS

A name worth remembering!

FAIRBANKS-MORSE

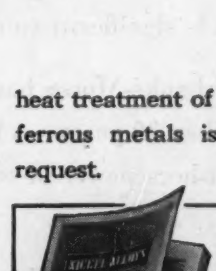
NICKEL AIDS IN THE AUTOMOTIVE INDUSTRY

to SPEED 'EM UP!

The ingenuity and experience of automotive engineers made possible the design of military vehicles, engineered for quality and quantity production in numbers that amazed the world. This kind of engineering-thinking pioneered the application of Nickel alloyed materials and foreshadows new achievements in the realm of peacetime automotive transportation.

In steering knuckles or differentials, in forged gears or cast blocks, a little Nickel goes a long way to provide essential dependability. It improves strength/weight ratios, increases wear and corrosion resistance, imparts toughness, and assures uniform properties of the metals with which it is combined.

For years the technical staffs of International Nickel have been privileged to cooperate with automotive engineers and production men. Counsel, and printed data about the selection, fabrication and heat treatment of ferrous and nonferrous metals is available upon request.



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JACKSON Universal Tie Tampers powered by JACKSON Portable Power Plants can be used by any size gang for the following operations: Ballast renewals in lifts up to 6"; General surfacing in any ballast or lift; Spot Tamping; Digging out ballast or Skeletonizing; Drainage improvements, ice removals from platforms, flangeways, frogs and switches . . . Write for manual, "JACKSON Tampers"—how to use and maintain them.

JACKSON Vibratory Tamper with step-cut blade, one of several interchangeable available blades.

ELECTRIC TAMPER & EQUIPMENT CO., LUDINGTON, MICHIGAN

JACKSON Tampers

FOR LONG RANGE

One-piece, cast steel, COMMONWEALTH UNDERFRAMES are furnished completely machined and ready for assembly, thus permitting increased locomotive output. Great strength is provided to withstand the severe shocks of switching service. The rugged construction is valuable insurance against damage to the power plant through accidents.

MOTOR TRUCKS have COMMONWEALTH One-Piece Cast Steel Frames with integral pedestals and bolsters. This unit construction insures true wheel alignment at all times. Superior performance, good riding qualities, and low upkeep costs result from this simplified design.

For maximum performance and long-range economy, specify COMMONWEALTH Cast Steel DIESEL UNDERFRAMES and MOTOR TRUCKS.

Equip Your Diesel Switchers with

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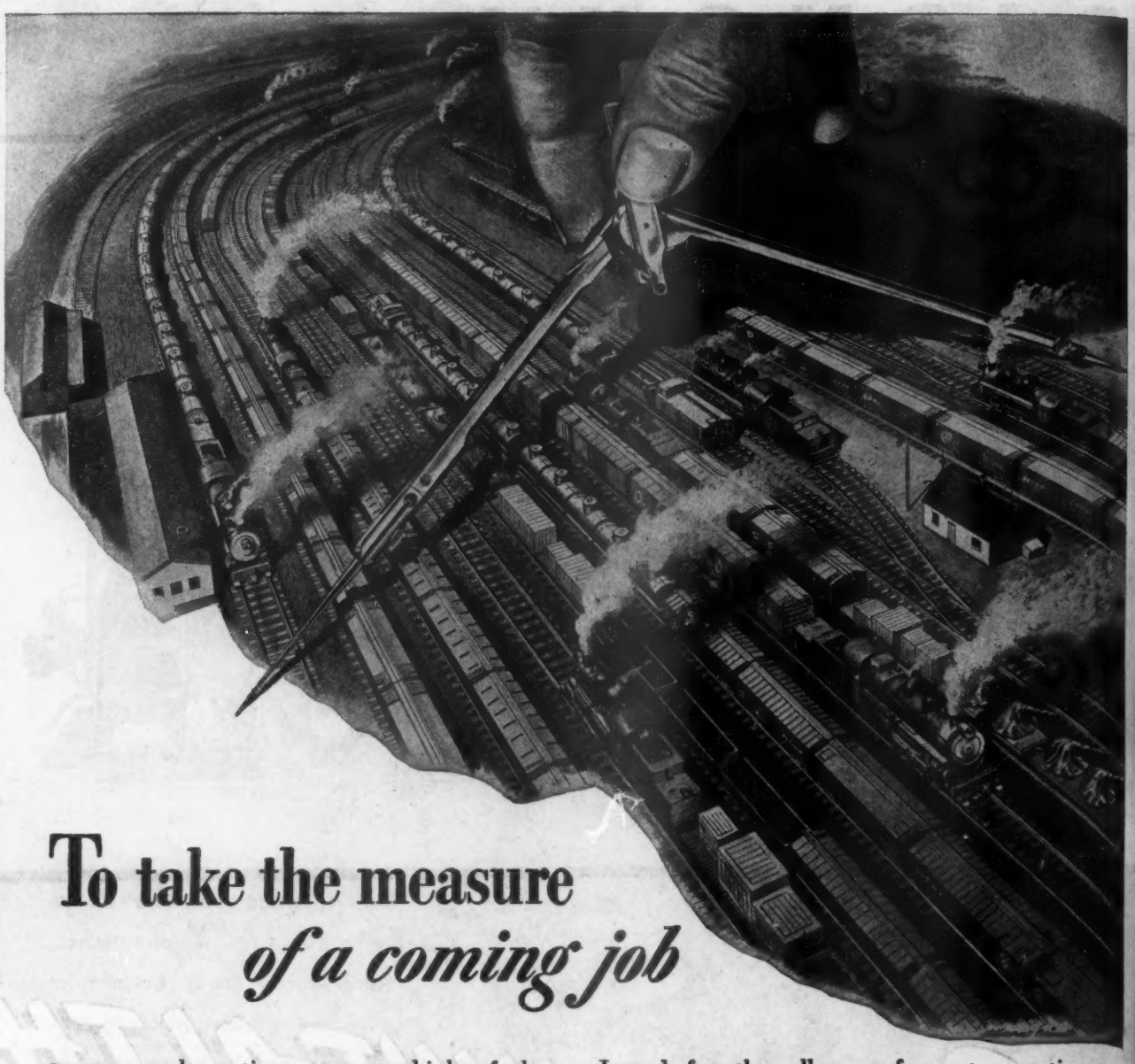
ECONOMY . . .

COMMONWEALTH

UNDERFRAMES AND TRUCKS

STEEL CASTINGS

EDDYSTONE, PA. • GRANITE CITY, ILL.



To take the measure *of a coming job*

FEW people notice or even think of the many special abilities the railroads have been required to develop. One of these is accurately anticipating the need of agriculture and other industry for rail transportation.

Because they do this, freight cars for years have almost always appeared at the right place, at the right time and in the right number. This has been a *must* for orderly marketing and efficient low-cost transportation.

Today, while everything they have is working day and night to hasten victory, the railroads are busy also taking the measure of the jobs that lie ahead.

What new kinds of goods will have to be carried? What kinds of cars will they need? Where will they come from and where will they go? What service and rates will be needed to develop business, shipping and employment?

Long before the call comes for postwar action, the answers to these and hundreds of other questions must be ready. Finding the answers to these questions is the work of a separate group of seasoned railroaders—the Railroad Committee for the Study of Transportation.

In this way, the railroads are looking ahead to the time when America turns again to peacetime work—and planning their necessary part in helping to make it a wonderful land to live in, just as they have helped make it strong in time of war.

ASSOCIATION OF AMERICAN RAILROADS

BUY MORE WAR BONDS

ALL UNITED FOR VICTORY

AROUND THE PLANT with DoALL

CONTOUR MACHINING — Today's fastest, most economical method for shape cutting. DoALLs in every department provide a hundred short cuts to increased production.

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New shapes made on the DoALL in a jiffy.

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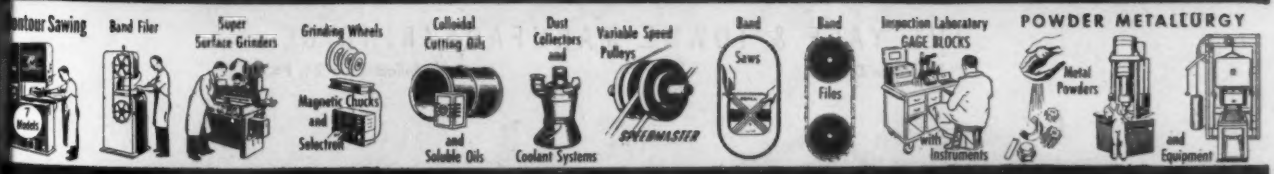

DoALL

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The achievements of American Railroads in distributing the materials of war and peace are matched by their accomplishments in handling stores and in maintaining rolling stock in top condition for service on the rails.

Railroads across the continent speed equipment upkeep and the movement of stores all along the line with the help of Yale Hand-Lift and Electric Industrial Trucks. Time and effort are saved, operations are smoother, handling costs are lower, and workers are freed to devote themselves to important tasks which employ skills to the best advantage.

Yale Materials Handling Machinery can save manhours and cut costs in your operation. Complete information sent on request. Phone—or write on your company letterhead.

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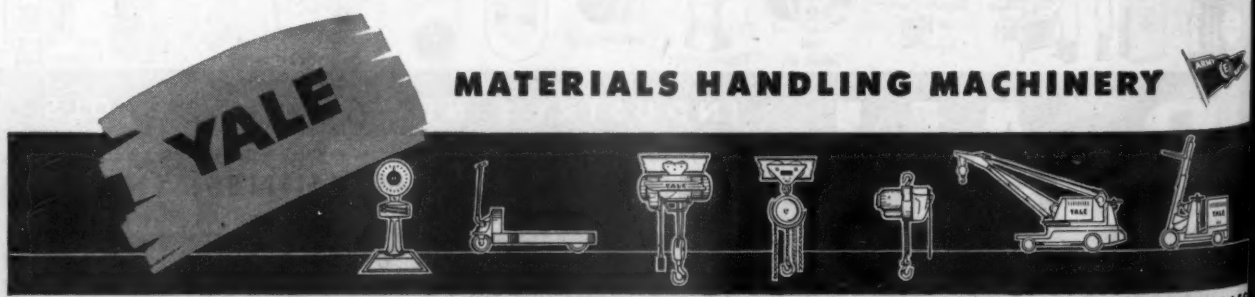
Robert J. Wylie, 612 Pioneer Bldg.

ST. LOUIS 3, Mo.
Clarence Gush, 2232 Olive Street

THE YALE & TOWNE MANUFACTURING CO.
Philadelphia Division *Philadelphia 24, Pa.*



HOISTS—HAND AND ELECTRIC • TRUCKS—HAND-LIFT AND ELECTRIC • KRON INDUSTRIAL SCALES

Acid-proof vest with 10,253 buttons

SHOWN HERE under construction is a refinery tower designed to remove undesirable tar materials from high-octane gasoline.

Because the steel shell of the tower will not withstand the corrosive action of separation acids, a chrome alloy lining was specified. 10,253 separate plug welds, each one impervious to acids and able to stand extreme pressures and temperatures, were necessary to secure the tower lining.

An unusual fabrication job, it is another of the missions completed by Consolidated Steel Corporation for war industries and armed services. It is an example of the craftsmanship Consolidated Steel will devote to the construction needs of peacetime America. Inquiries looking to future construction are solicited. Address the president.

Consolidated Steel

FABRICATORS · ENGINEERS · CRAFTSMEN

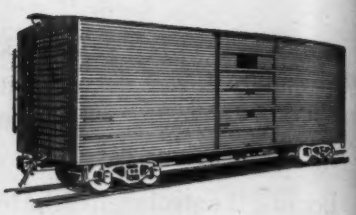
CONSOLIDATED STEEL CORP., LTD., LOS ANGELES, LONG BEACH, WILMINGTON, CAL.; ORANGE, TEX.

LARGEST INDEPENDENT IN THE WEST

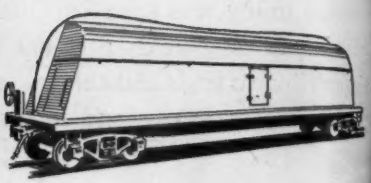
ANOTHER
BOND TODAY

ALLOY STEEL FREIGHT CARS

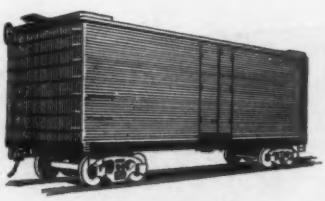
weigh less and last longer..



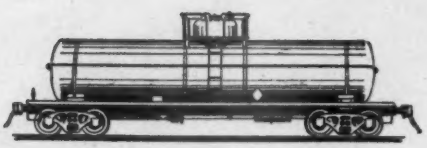
Box Car



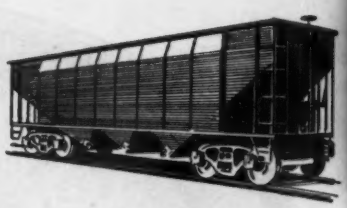
Milk Car



Refrigerator Car



Chemical Tank Car



Open-top Car

...than the cars you used to buy

Ask the car superintendents on the roads that use alloy steel cars. They will tell you that rolling stock of alloy steel is still giving efficient service after many years of strenuous wear. They will also tell you that these box and open cars can carry two to five extra tons of freight, because of the favorable weight-load ratio of alloy steel cars.

Coal cars made of alloy steel not only carry extra tonnage, but their corrosion resistance assures longer life. Corrosion resistance is important in refrigerator cars too, for dampness and the brine used in refrigerating systems cut down the life expectancy of cars made of ordinary steel.

Where extreme corrosion resistance is required for the transportation of strong chemicals, stainless steel is the alloy steel used. In milk cars, stainless steel is chosen, because its easy-to-clean, permanently smooth surface protects the purity of milk.

Now that you are buying new equipment, be sure that the cars you choose are made of steels that have a record of long and profitable service. While we do not make steel, we have had 37 years' experience in the manufacture of the ferro-alloys that give alloy steels their special properties. If you have questions about alloy steels for railroad equipment, write to us for further information.

BUY UNITED STATES WAR BONDS AND STAMPS

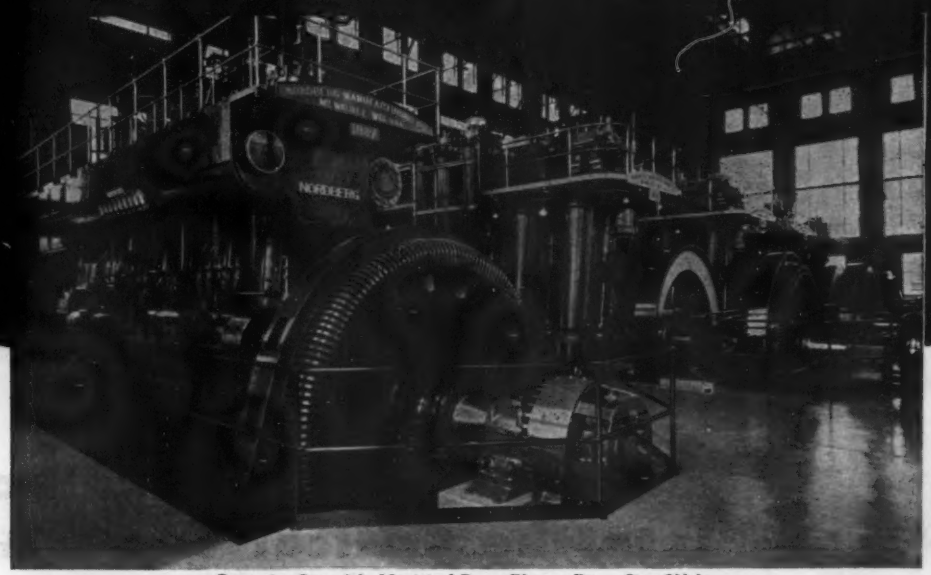
ELECTRO METALLURGICAL COMPANY
Unit of Union Carbide and Carbon Corporation
30 East 42nd Street UCC New York 17, N. Y.
In Canada: Electro Metallurgical Company of Canada, Limited, Welland, Ontario

Electromet
Trade Mark
Ferro-Alloys & Metals

Over 19,000 hours in operation

PORUS-KROME

still in good condition



Generating floor of the Municipal Power Plant at Ponca City, Oklahoma

Mr. Pat Schlesinger, Superintendent Municipal Water & Light Department, Ponca City, Oklahoma, has written us as follows:

"As you know, our plant burns a heavy-grade (8-10 gravity) fuel oil. Therefore our liner wear at times is somewhat excessive. On May 17, 1941, we installed a PORUS-KROME processed liner in our No. 5 engine. The results have been so satisfactory that we want to give you this report on it.

"Up to date the PORUS-KROME liner has had over 19,000 hours of operation and is still in good condition.

"Should we at any time purchase a new engine, PORUS-KROME liners will be a part of the specifications."

Evidence that PORUS-KROME *does* multiply cylinder and ring life continues to pile up. Be sure to get this greater reliability in engines you buy . . . specify PORUS-KROME. Write today for complete information.

PORUS - KROME

Good for the Life of your Engines

VAN DER HORST

U. S. PATENTS 2,040,578 AND 2,314,604

VAN DER HORST CORPORATION OF AMERICA OLEAN • NEW YORK CLEVELAND 11 • OHIO

AN AFFILIATE OF DRESSER INDUSTRIES

DIAL E-P MAN TODAY!

Albany	2-4095
Birmingham	3-3323
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Charlotte	5026
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Cincinnati	MA 0650
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Columbus	AD 4824
Denver	KE 5500
Detroit	MA 2233
Ft. Worth	4-6184
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Indianapolis	LI 3131
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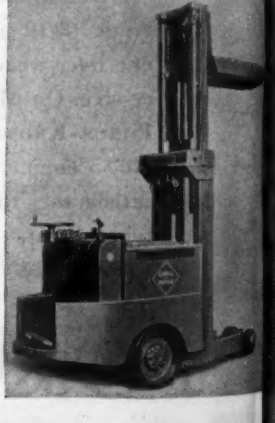
Kansas City	VA 7021
Los Angeles	PR 5911
Memphis	8-1648
Milwaukee	MA 7817
Minneapolis	GE 3247
Montreal	HA 7191
New York	COR 7-0797
NewOrleans	MA 6316-C
Philadelphia	LOM 3710
Pittsburgh	AT 6734
St. Louis	LA 4545
San Antonio	TR 3653
San Francisco	GA 1827
Seattle	EL 5722
Syracuse	2-9596
Toronto	WA 1478

Advancing with the Railroads- into the Critical Years Ahead

THE powerful, streamlined Trucks and Cranes that Elwell-Parker today is building in full volume, provide the same type of modern transportation service that your own Road is developing for the safe, high-speed transportation of freight and passenger traffic.

But in this industry as in yours, "full volume" does not provide enough new equipment to handle the emergency wartime load. Right now there aren't enough new Trucks to go around. In the present situation it is a matter of no small satisfaction to realize that scores of the Elwell-Parker Trucks and Cranes you bought 20 to 25 years ago are still operating around the clock.



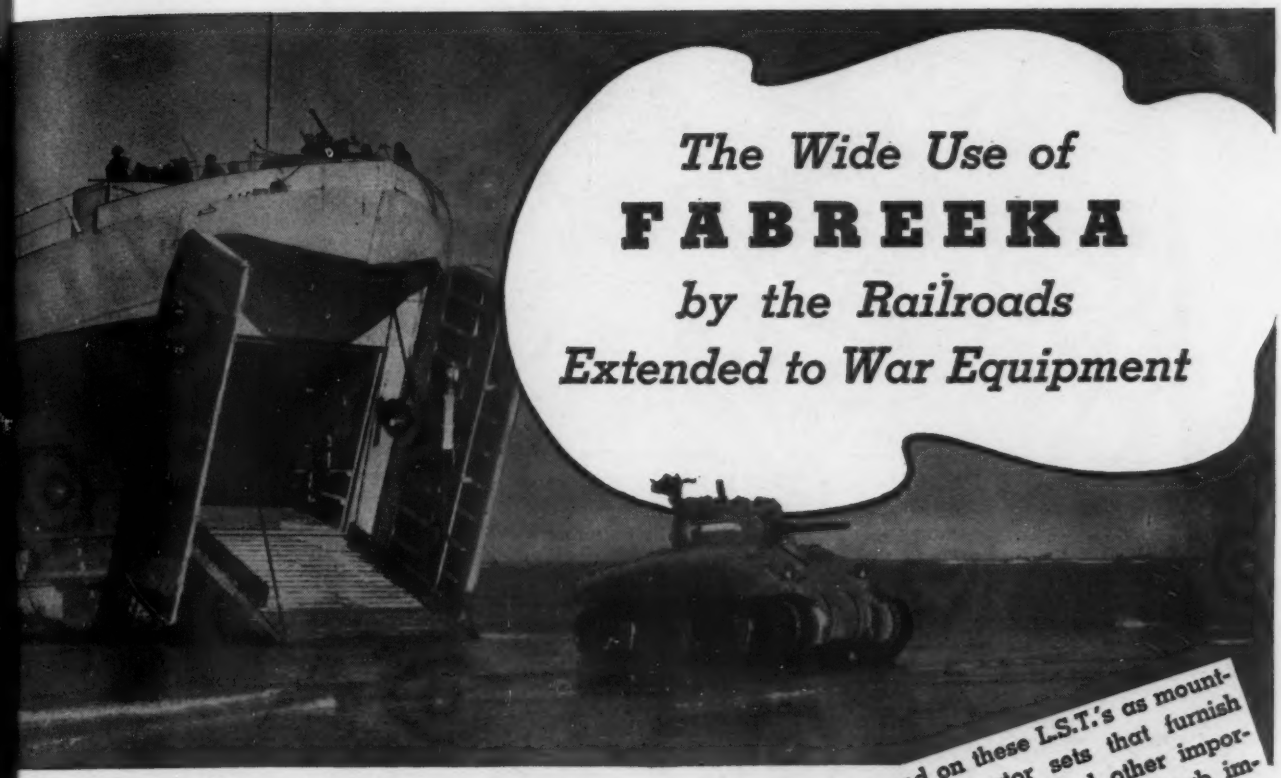
Elwell-Parker was first to build Electric Industrial Trucks and the Railroads were our first customers. Today every Elwell-Parker Unit when available is being allotted on your orders. So please keep in touch with the E-P Man—the dependable Transportation Advisor in your Main-Line City.

Because tomorrow, we hope, more Elwell-Parkers —as up-to-date as your own modern equipment —will be ready for full-time service in your Locomotive and Car Shops, Terminals and Stores.

The Elwell-Parker Electric Company, 4250 St. Clair Avenue, Cleveland 14, Ohio.

ELWELL-PARKER

POWER INDUSTRIAL TRUCKS



The Wide Use of
FABREEKA
by the Railroads
Extended to War Equipment

First used by the Railroad Industry to absorb shock, vibration and noise, FABREEKA is now widely used for the same purpose by the Armed Forces. This wartime experience will be available to the Railroads in solving many mechanical and engineering problems.

FABREEKA is used on these L.S.T.'s as mountings for engine generator sets that furnish power for lighting systems and other important equipment. FABREEKA units absorb impact shock and vibration and thus reduce breakage and mechanical wear.

FABREEKA is a material of limited resiliency, having minimum of permanent set; with high damping, great strength and long life.

In the Railroad Field FABREEKA is used on Car Trucks, Car Platforms, on Steam and Diesel Electric Locomotives and to pad Railroad Crossings and on Railroad Bridges, Highway Underpasses and on Track Scales.

FABREEKA

FOR IMPACT SHOCK AND VIBRATION

FABREEKA PRODUCTS COMPANY
Incorporated
BOSTON 10, MASS.

DIESEL ENGINE TEMPERATURE CONTROL PANEL

Lower OPERATING and MAINTENANCE COSTS

With HONEYWELL Automatic Control of Diesel Engine Temperatures!

TOP RUNNING EFFICIENCY of Diesel locomotives requires constant cooling water temperature. The Honeywell Shutter Control System has been designed to meet this need. This is an important new development because maximum running efficiency means lower operating costs and less engine wear — lower maintenance expense.

HOW THE SYSTEM FUNCTIONS

An air operated thermostat in the water cooling system regulates the position of the shutters. Thus the flow of air through the engine radiators is constantly controlled. Adjustments are automatically made as required for such changing conditions as weather and speed of travel.

TESTED AND PROVED IN USE

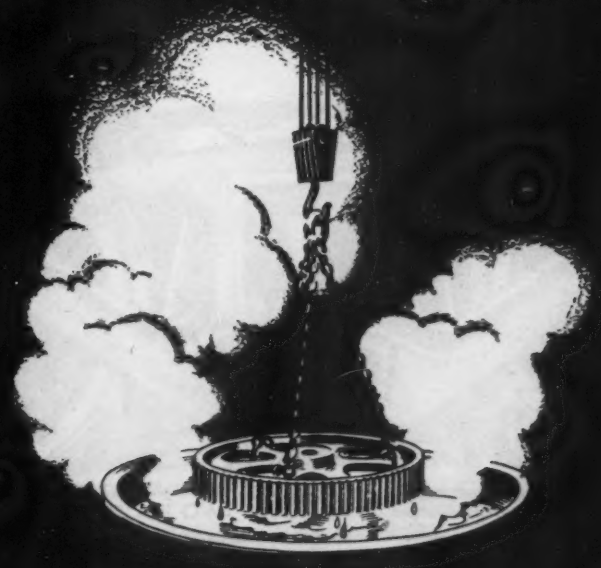
Conclusive tests in actual use have proved the advantages of the Honeywell Shutter Control System. For example, Rock Island locomotive No. 651 has run 135,000 miles with no service adjustments to the shutter control system. This successful test caused the Rock Island Railroad to place an order to equip their entire fleet of diesel locomotives with Honeywell Shutter Control Systems.

Write Minneapolis-Honeywell Regulator Co., 433 East Erie St., Chicago 11, Ill. Branches in principal cities.

Back The Attack—
Buy MORE Than Before!

MINNEAPOLIS
Honeywell
CONTROL SYSTEMS

BETTER STEEL CASTINGS THROUGH RESEARCH



What Changes Quenching Makes!

Research has developed many ways of improving upon nature herself—of giving to steel castings characteristics and properties which may be predicted in advance, to meet known requirements.

In a few seconds, the metal structure of a steel casting can be completely changed—by heating it to a certain predetermined temperature and then immersing it quickly into a quenching medium. The principle is old, but many of its applications are new, as they affect larger, more complex designs, and meet new conditions.

So precisely has the science of heat treatment been worked out that it is now possible to control its effects within very exact limits. Cast steel responds to heat treatment equally as well as steel in any other form. Varying degrees of hardness can be given to the surface of a casting, to any desired depth, or to any section of the casting which requires special properties.

Often steels may be given, by properly controlled heat treatment, properties formerly obtained only by costly alloys.

This has been particularly important in war production, where entirely satisfactory results have been secured in spite of shortages of many important alloying agents.

Research now permits the user to buy his steel castings by prescription as accurate as a doctor's prescription.

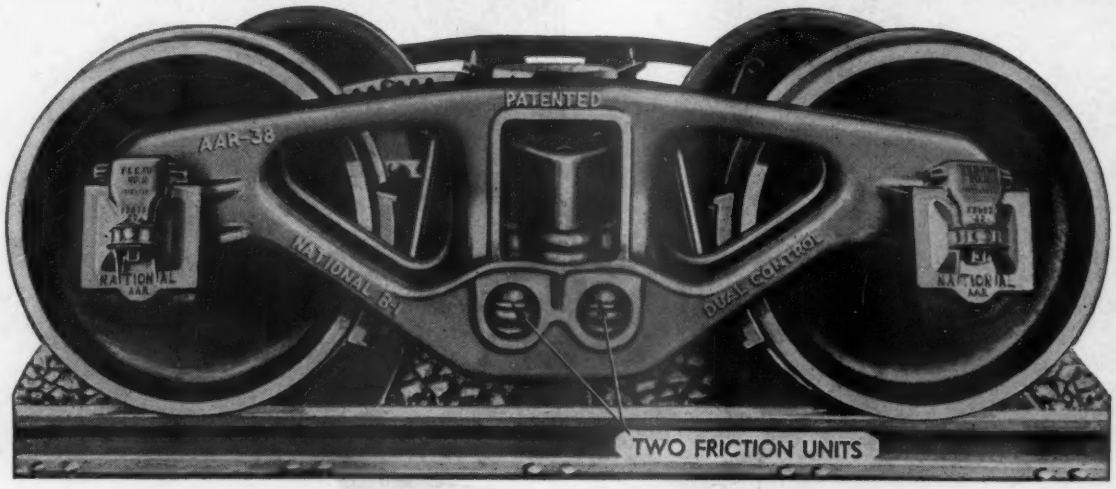
As you look into the future, planning what you will make and what you expect to make it out of, consider this wide adaptability of steel castings, which enables them to meet an infinite range of conditions, with economy and with certain results.

Published by the Steel Founders' Society of America, to tell you about its organized Research Program.

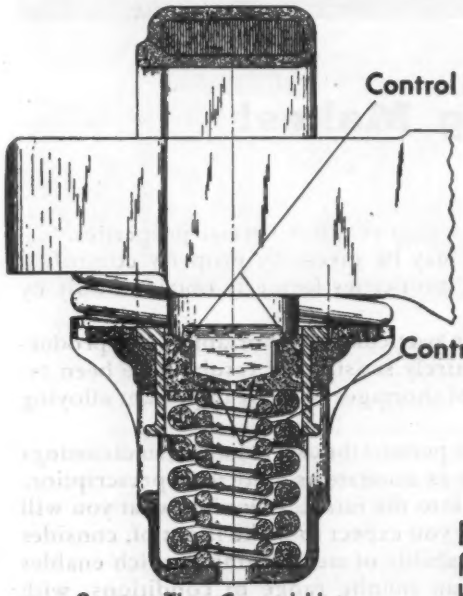
MODERNIZE AND IMPROVE YOUR PRODUCT WITH

STEEL CASTINGS

National B-1 With Dual Control



NO Spring Plank or Spring Plates are required. This results in a saving of over 500 lbs. in unsprung weight and critical steel per car. Springs cannot lose out of side frame, and are protected against going solid. The Dual Control feature which controls both vertical and horizontal oscillations also prevents the wear between frames and bolster, which is common to other makes of trucks.



Section Thru Control Unit
Two Control Units in each frame

Vertical oscillation or spring bounce is friction controlled by pressure of wedges against steel wear shoes, during spring action. This protects the lading.

Horizontal oscillation is controlled by opposing angles of incline on the friction wedges, which center the bolster trunnions and resist forces which tend to throw the truck out of square. This is necessary for safety in high speed service.

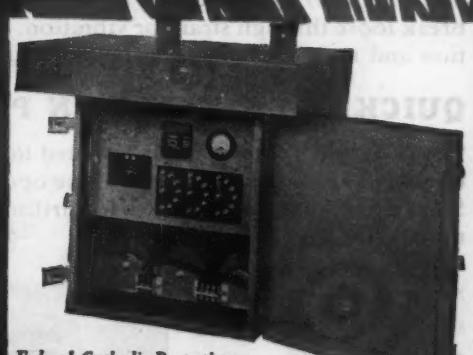
Brake Beam Safety Ledges which are an integral part of the side frame are an A.A.R. approved brake beam support when the bottom rod goes through the bolster, and no other safety devices are required. This saves expense and weight of extra parts.

SPECIFY NATIONAL B-1 TRUCKS WITH DUAL CONTROL

NATIONAL MALLEABLE AND STEEL CASTINGS CO
General Offices CLEVELAND, OHIO
Sales Offices: New York, Philadelphia, Chicago, St. Louis, San Francisco
Works Cleveland, Chicago, Indianapolis, Sharon, Pa., Melrose Park, Ill.

Canadian Representatives: RAILWAY AND POWER ENGINEERING CORPORATION, LTD., *Toronto and Montreal*

STOP "Leap-Frog" Corrosion



Federal Cathodic Protection Rectifier, Model FTR 5114-S. Output 20 amperes at 10 to 40 volts. Other sizes as required.

"Leap-Frog" Corrosion damages underground pipes and cables.

Pipes or other metal structures are in places electro-positive in relation to the soil and due to natural galvanic action corrosion results. Metal is taken away from one section of pipe and deposited somewhere else along the exposed pipe.

By using Federal Cathodic Protection Rectifiers, "Leap-Frog" corrosion is foiled. On constant guard is a direct current charge which cancels the harmful electrolytic corrosive action on oil, gas and water pipelines and underground cables.

These Federal units have no moving parts, so they last indefinitely — with the absolute minimum of attention. In desert heat or torrid dampness they keep on the job day and night.

Proper engineering for the corrosion problem at hand calls for the specialized consulting engineering service which is yours — when you look to Federal. Write today for full details.

Federal Telephone and Radio Corporation

AN IT&T ASSOCIATE

Newark 1, N. J.

SAFEST FOOTING

Overall pattern of ever-sharp Morton Kass perforated buttons provides positive traction in any kind of weather, from any angle of approach.

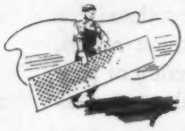
ONE PIECE CONSTRUCTION

Made in easily handled sections of proper width without welds, rivets or joints. No special tools required; nothing to work loose.

ABSOLUTELY SELF CLEARING

Rounded edges of circular openings provide little hold for snow and ice. Ample size openings comprise a large part of tread area.

EASIEST TO INSTALL



Its light weight plus the simple cup and bolt fastening device make "Open-Grip" Tread very easy to install quickly—with minimum labor.

EXTRA STRONG CONSTRUCTION

Openings formed with a downward extending flange to make "Open-Grip" Tread far stronger than sheet from which it is fabricated.

COSTS LESS TO USE

With its strength due to construction features instead of weight "Open-Grip" costs less per car. Saves on installation costs too.

Only MORTON "Open-Grip" Safety Tread Running Board Offers ALL These Six Important Features

You cover every angle when you standardize on Morton "Open-Grip" Safety Tread for a self-clearing, anti-slip, all-weather surface. On freight cars, brake steps and locomotives, "Open-Grip" Tread makes it easy and inexpensive to provide really safe footing.

MORTON "OPEN-GRIP" SAFETY TREAD

A substantial part of the area of "Open-Grip" Tread is open space. Curved construction of open areas discourages accumulation of snow and ice. Long-famous Morton Kass Perforated Buttons provide contact friction no matter what the direction of approach.

NO WELDS - NO RIVETS NO LOCK JOINTS

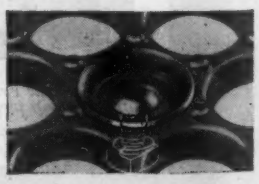
Unique one-piece construction of "Open-Grip" Tread is *safer* construction; there's nothing to break loose through strain or vibration. Installation and maintenance costs are lowered too.

QUICKLY FASTENED IN PLACE

"Open-Grip" Tread is easily fastened to saddles of car roof by a cup fitting any of the open areas. Slotted bolt-hole compensates for drilling variations.

DISTRICT SALES OFFICES

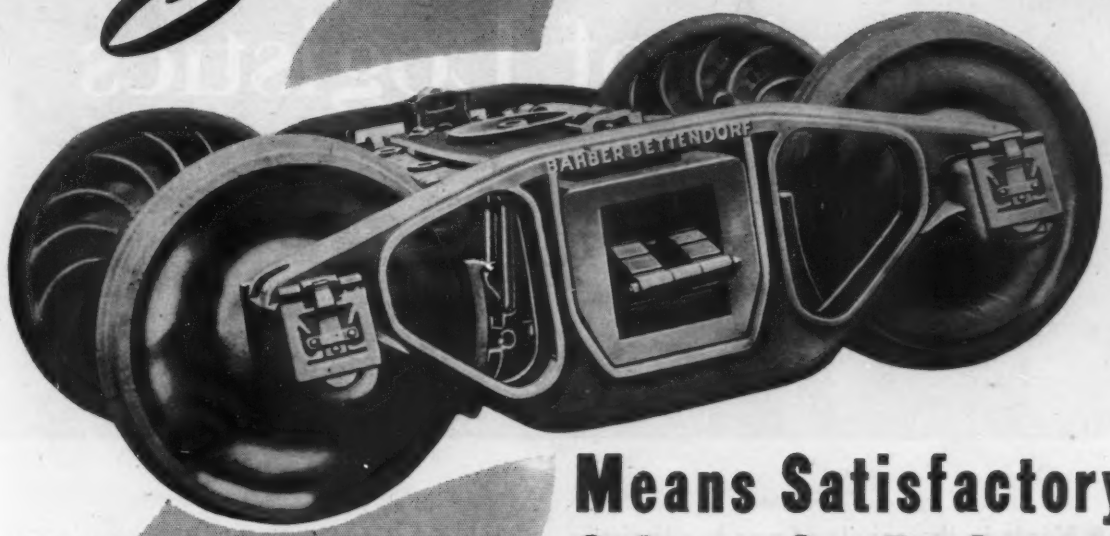
New York, N. Y.—30 Church St., Courtland 7-7542.
Chicago, Ill.—332 S. Michigan Ave., Wabash 6789.
St. Louis, Mo.—Paul Brown Bldg., Central 3348.
St. Paul, Minn.—E906 First National Bank Bldg., Cedar 1940.
Washington, D.C.—6945 Wisconsin Ave., Bethesda, Md., Wisconsin 7378.



MORTON MANUFACTURING CO.

5105 WEST LAKE STREET • CHICAGO 44, ILLINOIS

Barber- Bettendorf *Swing Motion* Trucks



Means Satisfactory Caboose Car Performance

The strain of today's wartime activity can play havoc with your train crews. To help alleviate such conditions and as a constructive step in your employee relationship program, equip your cabooses with Barber-Bettendorf Swing Motion Trucks.

Swing Motion Trucks make comfortable riding cabooses. Trip fatigue is thereby reduced to a minimum keeping your train crews alert, efficient, and relaxingly satisfied.

EASY RIDING

Full-elliptic springs reduce vibration and take the "whip" out of sharp curves.

HIGH SPEED DESIGN

Counterbalances the shock and strain of high speed operation.

SIMPLIFIED CONSTRUCTION

Easy to assemble and install.

LOW COST MAINTENANCE

Insured by cast steel construction and experienced workmanship.

Keeps Crews Alert

STANDARD CAR TRUCK COMPANY

332 SOUTH MICHIGAN AVENUE - CHICAGO 4, ILLINOIS

Logic of Logistics

● Never in the annals of war has logistics, the business of transport and supply, been as large a factor as in this global conflict. And, accordingly, never before have railroads anywhere been confronted with the colossal job which American railroads are now performing with such glorious success. In the logic of logistics it is obvious that rolling stock must be kept rolling. Time in the shop for maintenance must be reduced to a minimum. Glidden TWO-A-DAY Freight Car Paint is helping many railroads to do this. In addition to its fast drying speed, which makes possible the application of *two coats a day,* TWO-A-DAY paint is very durable. It provides a good looking, long lasting job.

TWO-A-DAY car painting is but one example of Glidden Railroad Technical Service which is available to the entire industry. Eight strategically located plants and research laboratories make service quickly available, wherever you are located.

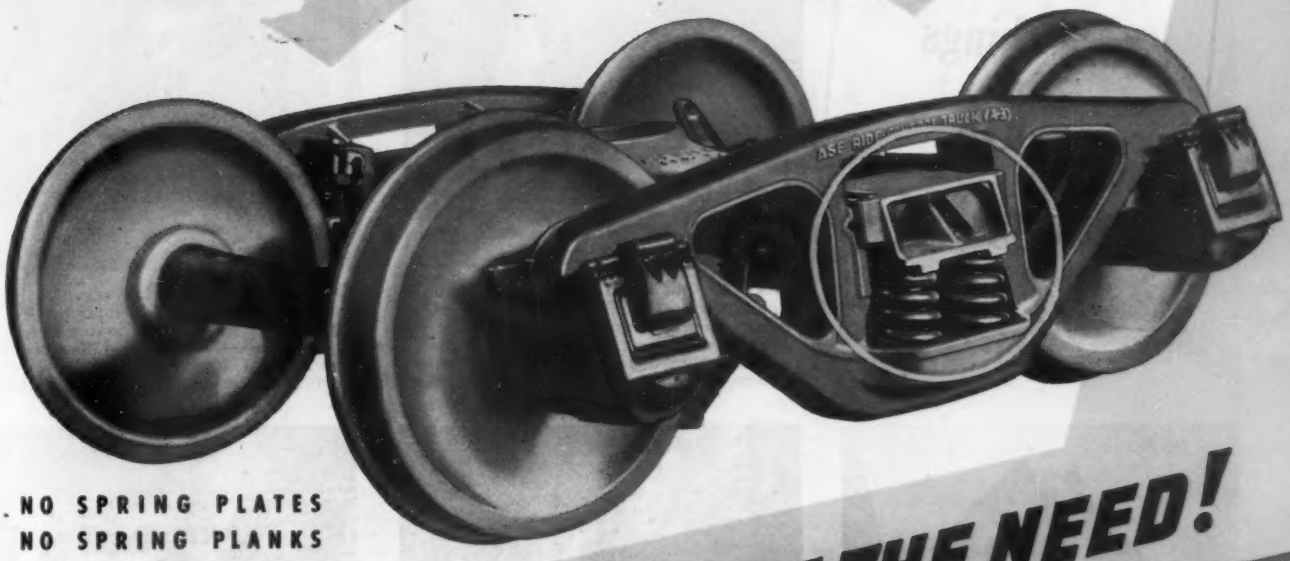
Inquiries are invited on specific problems, current or postwar. Just drop us a line.

TIME-TESTED

THE GLIDDEN COMPANY • Cleveland 2, Ohio

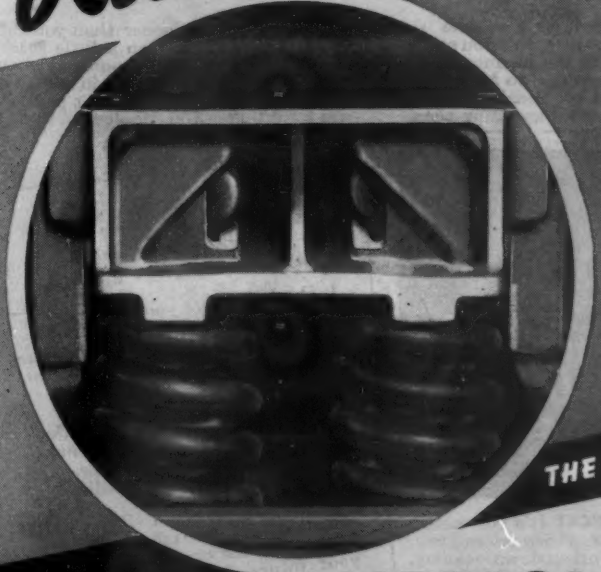
GLIDDEN *Pacemaker in Paints*

FOR Safety AND Speed



NO SPRING PLATES
NO SPRING PLANKS

Ride-Control FITS THE NEED!



High speeds are *safe* speeds with the A. S. F. Ride-Control Truck (A-3). Not only does it meet all A. A. R. strength requirements, but it is proved in performance as well. Every day, in general interchange service on American railroads, the Ride-Control Truck is proving itself safe in high-speed operation. This, from a truck that is in the price range of the conventional freight-car truck.

THE TRUCK FOR TODAY'S NEED—TOMORROW'S SPEED!

AMERICAN STEEL FOUNDRIES

CHICAGO

MINT-MARK OF FINE CAST STEEL

SAVE NOW...fight inflation...

..and these are things worth saving for!

SAVE FOR CHILDREN! It costs money to have a child, to raise a child. But where's the father or mother who would tell you it isn't worth every penny it costs and more? Save now... while the money's coming in....save to have and enjoy your children while you're young!

SAVE FOR COLLEGE! If you went to college yourself, you want your children to go, too. If you didn't—that's a double reason you want them to have the good life you missed. Start your college fund now—while you're earning good money. It will come in handy.

SAVE FOR A HOME! A house of your own, a garden to dig in, room-to-grow for the children—every man and his wife want that. Houses are high-priced, hard to get, now. But there'll be a lot of home building after the war. Save for *your* house now.

SAVE FOR A TRIP! Today's no time to travel. But after the war—aren't you rarin' to go? To the ocean or the mountains, to Yellowstone or the Smokies, to Mexico or the new Alaska highway. Sensible saving today can finance glorious spending then.

SAVE TO RETIRE! Sooner than you think, the day will come when a little shack in Florida or a place in the country looks better to you than an active life in town. Social security is good—but it won't pay for all you want unless you supplement it.

SAVE FOR SAFETY! Money's easy today! But evreybody can remember that it wasn't always that way—and it may not be again. The man who has a little money laid by, helps prevent depression—is in better shape to ride out hard times if they come.

SAVE TO SAVE AMERICA! It's the money you *don't* spend that helps keep prices down. And only by keeping prices down—saving, not spending—can we head off inflation, keep America a stable, happy place for our boys. For *your* sake, for *theirs*—SAVE!

4 THINGS TO DO to keep prices down and help avoid another depression

1. Buy only what you really need.
2. When you buy, pay no more than ceiling prices. Pay your ration points in full.
3. Keep your *own* prices down. Don't take advantage of war conditions to ask for more—for your labor, your services, or the goods you sell.
4. *Save.* Buy and hold all the War Bonds you can afford—to help pay for the war and insure your future. Keep up your insurance.

HELP US KEEP PRICES DOWN

A United States War Message prepared by the War Advertising Council; approved by the Office of War Information; and contributed by this magazine in cooperation with the Magazine Publishers of America.

Lighter - Stronger - Better

Brake Beam Suspension is Safely Guarded when Supported by Schaefer Loop Hangers

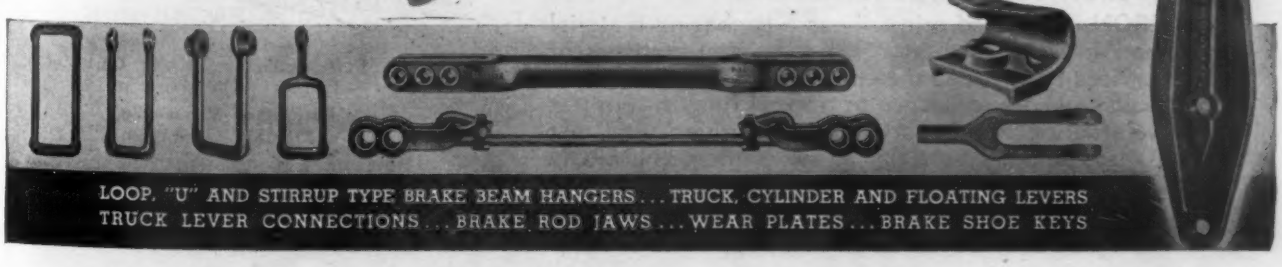
Schaefer Light Weight Design Insures More Than Car Life

STANDARD ON MOST ROADS

When your freight car repair program is under consideration you can be certain that Schaefer Service will meet your delivery requirements.

Schaefer EQUIPMENT COMPANY

KOPPERS BUILDING • PITTSBURGH, PA.



LOOP, "U" AND STIRRUP TYPE BRAKE BEAM HANGERS... TRUCK, CYLINDER AND FLOATING LEVERS
TRUCK LEVER CONNECTIONS... BRAKE ROD JAWS... WEAR PLATES... BRAKE SHOE KEYS

In giant presses sheets of selected Douglas fir veneer, a bonding agent of heat-set plastic, and a surfacing film of a remarkable new fibrous plastic are permanently fused together. The result—INDERON.

Facts About

INDERON

for Postwar Planners

WHAT IS INDERON?

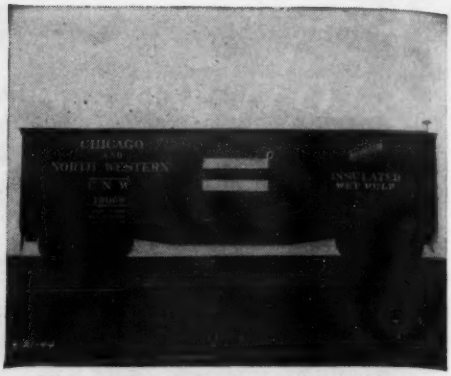
INDERON is a **new** stabilized structural product. Douglas fir veneers, plastic glues and a fibrous plastic film are chemically and infrangibly united under high heat and pressure to produce a complete, finished material in large panel form. INDERON is neither a plastic nor a plywood, but an alloy retaining the better qualities of both.

WHAT ARE THE PROPERTIES OF INDERON?

INDERON is waterproof, with a dense hard finish highly resistant to abrasion, impact, vapor permeation and water absorption. INDERON needs no surface protection, no decorative treatment, no structural support. INDERON is stable. It does not warp or twist. It combines BEAUTY . . . STRENGTH . . . DURABILITY.

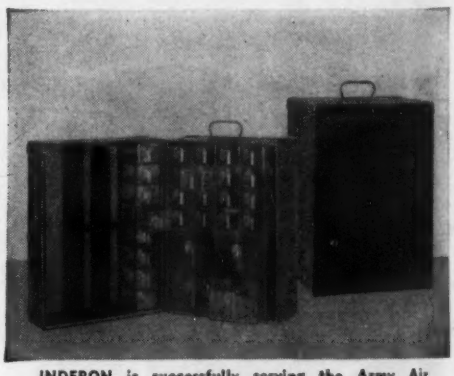
IS INDERON CURRENTLY AVAILABLE?

INDERON, developed primarily as a packaging material for the Air Corps, was later adopted by all branches of the services for a wide range of specialized applications, particularly where resistance to tropical fungus, termites and weathering was important. While these vital war needs have taken practically all production, INDERON testing and research have continued—and after the war this unusual product will emerge as a new, distinctly **different** structural material.



The unusual physical properties of INDERON suggest many uses in coach and car construction. As a liner for the Chicago and Northwestern wet pulp car, shown above, all necessary requirements for this difficult type of service were met by INDERON. It is tough, hard, easy to install, low in cost.

INDERON is waterproof, effectively stops vapor transmission, creates an enduring surface, can be installed on both the interior and the exterior of freight cars. INDERON is considerably stronger than plywood, needs no paint or finish.



INDERON is successfully serving the Army Air Corps as the preferred material for packaging many vital parts, medical supplies and delicate instruments. INDERON has also been used for many other important war purposes, and has proven its ability to resist tropical fungus, termites, weathering and water immersion.

INDERON

THE *Stabilized* STRUCTURAL PRODUCT

Buffelen Lumber & Mfg. Co.
Tacoma 1, Washington
Washington Veneer Co.
Olympia, Washington
manufacturers

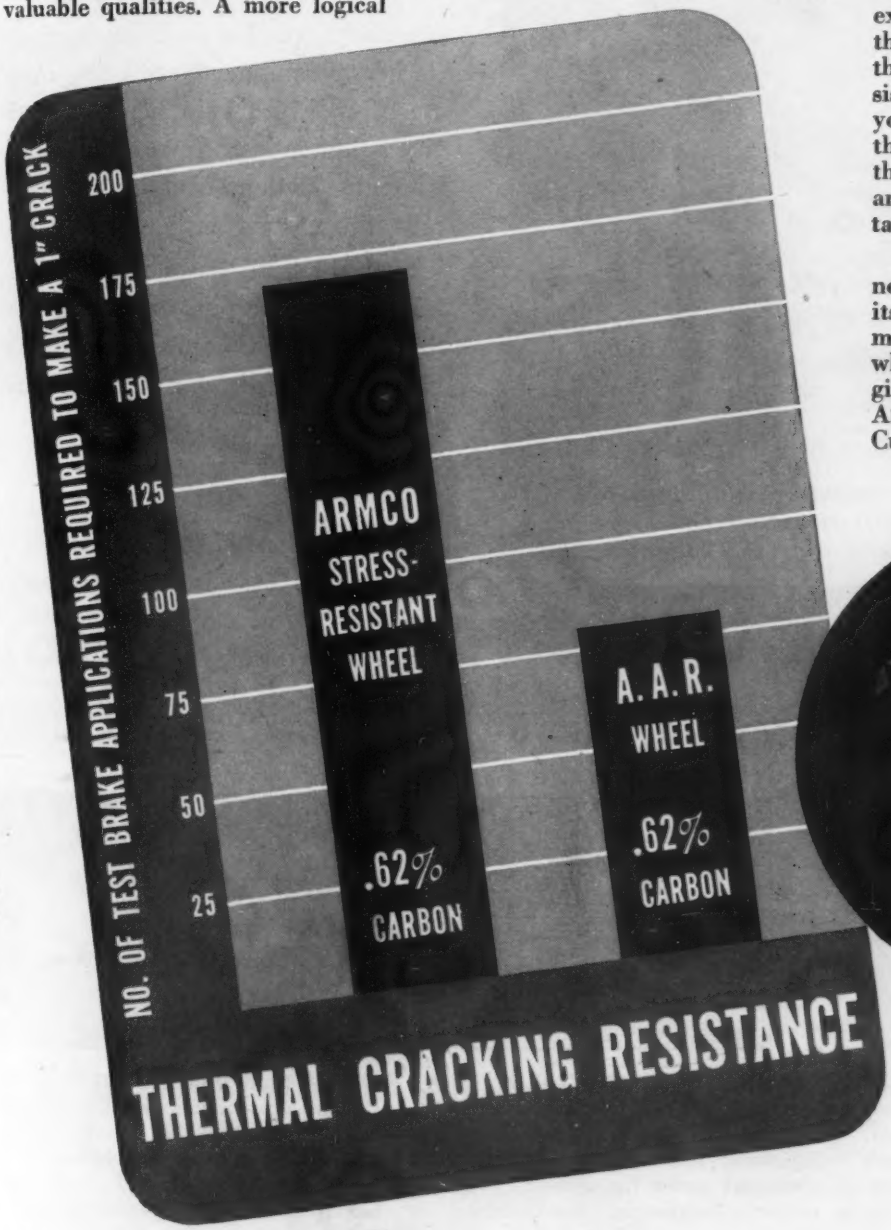
Chicago Sales Office:
9 So. Clinton St., Chicago 6

here's the LOGICAL WAY
TO WHIP THERMAL CRACKING

Reducing the carbon in railroad wheels means less thermal cracking. It also means the loss of other and valuable qualities. A more logical way is to specify ARMCO Stress-Resistant Wheels. Mechanical departments are learning that these improved wheels are setting new standards of safety and economy.

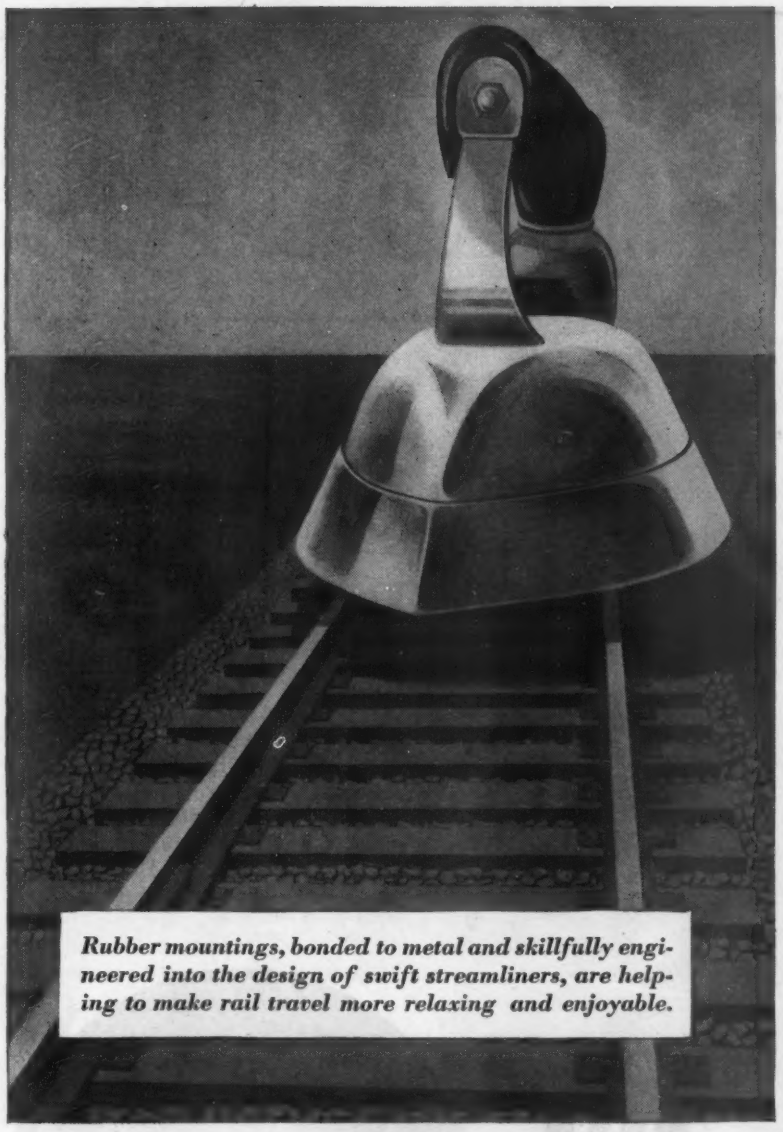
Look at the chart for a specific example. On the testing machine the ARMCO S-R Wheel has more than twice the thermal cracking resistance of the A.A.R. wheel. Thus you gain greater protection against thermal cracking and still retain the advantages of a higher carbon analysis, including effective resistance to shelling.

Ask the ARMCO Man about this new wheel that has demonstrated its ability to withstand conditions much more severe than any other wheel ever withstood. He'll gladly give you all the data you require. ARMCO Railroad Sales Co. Inc., 2621 Curtis Street, Middletown, Ohio.



ARMCO Engineers worked more than five years developing the Stress-Resistant Wheel. To do it they invented a laboratory machine that simulates actual service conditions and quickly determines the cause of wheel failures.

ARMCO ARMCO **STRESS-RESISTANT WHEELS**



Rubber mountings, bonded to metal and skillfully engineered into the design of swift streamliners, are helping to make rail travel more relaxing and enjoyable.

IRONING OUT BUMPS WITH RUBBER

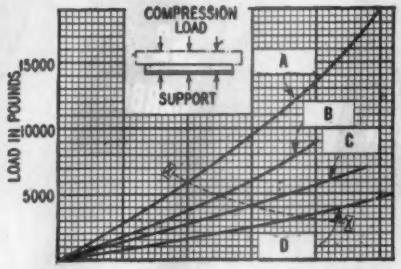
Vibration is no longer accepted as a necessary evil. Its destructive effects on heavy equipment are being overcome, its disturbing influence on sensitive precision instruments minimized. The introduction of rubber springs, or mountings, is responsible.

Such applications of rubber structural parts were pioneered by United States Rubber Company technicians. They are the direct result of a new science . . . the science of smoothness.

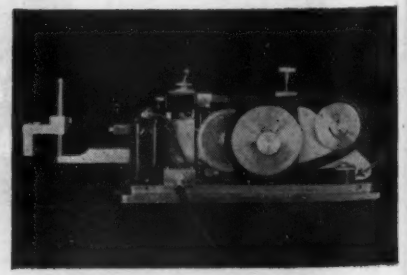
U. S. Rubber technology has spearheaded this new science . . . has led to new conceptions of machine-design in many fields. That is a fact of importance today, of even greater importance tomorrow.

SERVING THROUGH SCIENCE

INDUSTRY'S RUBBER HEELS—Rubber-bonded-to-metal parts, compounded and designed by U. S. Rubber technicians, have wide usefulness on railroad cars and as resilient supports for light mechanisms.



ENGINEERED RUBBER—Load-deflection characteristics of U. S. Rubber Mountings are determined in advance, so that guesswork is eliminated in producing structural parts for industry. Today rubber is "engineered" like metal.



1/1,000,000th INCH MEASURED by this Profilometer—a supersensitive measuring instrument used in industry. To assure against the slight vibration caused by the 9-watt motor, U. S. Rubber mountings are used for resilient supports.

Listen to the Philharmonic-Symphony program over the CBS network Sunday afternoon, 3:00 to 4:30 E.W.T. Carl Van Doren and a guest star present an interlude of historical significance.

UNITED STATES RUBBER COMPANY

1230 SIXTH AVENUE • ROCKEFELLER CENTER • NEW YORK 20, N. Y.

POWER FOR THE TOUGH JOBS

• "Caterpillar" Diesel D7 Tractors with bulldozer and carrying type scrapers building railroad siding for loading platforms near Ostrander, Minn. Working in wet clay 11 hours a day.

"CATERPILLAR" Diesel Tractors have introduced an entirely new idea of off-track maintenance. These husky machines, traveling on broad, ground-gripping tracks, slug their way through mud, bogs, sod or brush, moving great quantities of earth as they go.

Their rugged "Caterpillar" Diesel engines deliver an enormous amount of power and can work long hours under full loads. Yet they use but small amounts of low-price fuel, which not only means unusual economy, but also helps to simplify fuel-handling problems.

Railroads fortunate enough to own "Caterpillar" Diesels have discovered that they are "machines of all labor." They operate with bulldozers, traildozers, scrapers, booms, winches, shovels, loaders—to handle almost every MW job.

Particularly important today, with the heavy volume of wartime traffic on the rails, is the fact that "Caterpillar" Diesel Tractors work independently, without interference to train movements.

"Caterpillar" has some dramatic railroad performance histories, which are available to all MW men who are interested in getting the job done at the lowest cost on record. Write for the facts.

CATERPILLAR TRACTOR CO., PEORIA, ILLINOIS

CATERPILLAR DIESEL

REG. U.S. PAT. OFF.

TRACTORS • ENGINES AND ELECTRIC SETS • EARTHMOVING MACHINERY

—life-giving transfusion...

for the nation's locomotives

Boiler feed water treatment stands high among the vital factors responsible for the phenomenal performance of today's locomotives. *Life-giving* water treatment permits longer engine runs . . . extends periods between washouts . . . decreases the amount of fuel consumed and helps maintain peak locomotive efficiency.

For the ultimate in boiler feed water treatment, the nation's leading railways look to Nalco—*the complete* water treatment service. The Nalco system provides scientifically prepared chemicals, the benefits of advanced research, modern treating equipment plus a competent service staff.

Nalco Special D . . . a product of Nalco research, to control steam quality in locomotive boilers, is making a vital contribution to wartime railroad operation. One railroad, which formerly used another type of treatment, finds Nalco Special D a vast improvement and credits it with making operation possible under heavy wartime traffic conditions.

NATIONAL ALUMINATE CORPORATION
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PAIGE-JONES CHEMICAL CO.
Canadian inquiries should be addressed to Aluminate Chemicals, Ltd., 555 Eastern Avenue, Toronto, Canada

Nalco

System of Water Treatment

Railway Age

With which are incorporated the Railway Review, the Railroad Gazette and the Railway Age-Gazette. Name registered in U. S. Patent Office.

Vol. 117 September 16, 1944 No. 12

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Herein is told what can be done in attractive, modern station construction with a minimum use of critical materials. Of advanced design, the new structure is termed "a fitting complement to the road's streamlined Zephyr trains."

Milwaukee Gets First Fairbanks-Morse Diesel Switcher ***440***

Describing the 120-ton, 1,000-hp. switching locomotive, powered with opposed-piston engine, lately delivered to the railroad and now doing three-shift switching service at Milwaukee, where it is being thoroughly tested in all types of terminal switching.

Pennsylvania Installs C. T. C. on 53 Miles of Single Track ***444***

An illustrated feature article describing the installation which has greatly expedited train movements on the Red Bank, Pa.-Oil City section of this road's Pittsburgh-Buffalo line.

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★

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Obtain a higher degree of safety

with "Union" Coded Track Circuit Control!

"UNION" Coded Track Circuit Control permits the display of a "non-restrictive" signal indication only when its component parts are in motion at the required rate of activity.

Continuously-operating code transmitters at the exit end of each track circuit break up the current applied to the rails into recurring pulses to form codes, such as clear 180 code, approach-medium 120 code and approach 75 code. To produce a "clear" indication, for example, the code-following track relay at the entrance end of a track circuit *must receive and follow* clear 180 code, alternately picking up and releasing in step with the "on" and "off" periods of the code.

This means that the track circuit rechecks its own integrity a predetermined number of times each minute because any stoppage of code or interruption of its receipt due to a train shunt, broken rail, etc. causes the signal to display "stop". For complete details, see Bulletin No. 157.

UNION SWITCH & SIGNAL COMPANY

SWISSVALE, PA.

The Week at a Glance

A LOOK AT THE RECORD: Governor Dewey hits the New Deal in its most vulnerable spot when he attacks it for having protracted the depression and unemployment. The *Railway Age* began criticizing it on this ground in the summer of 1933, and continued to do so until expenditures for war began in 1940, changing the nation from a peace to a war economy. The most important issue in the current campaign is whether abolition or continuance of New Deal policies is more likely to cause prosperity and large production and employment in the post-war era. Thus our leading editorial's review of the New Deal's pre-war economic record, which should be enlightening to those wishing to be enlightened. The review assembles significant quotations from *Railway Age* editorials of the 1932-1940 period, when the number of unemployed ranged from 8,910,000 to 14,514,000.

●

RULE BY CONSENT DECREE: Senator Moore of Oklahoma has looked into the anti-trust complaint against the railroads and decided that it is a "fraud on its face"—aimed at putting into Justice Department files another of those consent decrees which are fixing the Attorney General to become an "economic czar." In a recent Senate speech, Mr. Moore told his colleagues that this "political lawsuit" marks the New Deal's entry into "the final stages of its program of national socialism"; for the New Deal "economists" realize transportation's importance in the national economy. He warned that the move against the railroad industry "at the very first whisper of victory" presages "what is in store for all private enterprise."

●

BURLINGTON STATION: The Burlington's station at Burlington, Iowa, was destroyed by fire in January, 1943, and it has now been replaced by a new structure which represents the finest in modern station design and architecture—a "fitting complement to the road's streamlined Zephyr trains," is how one of this issue's feature articles puts it. The article describes the new facility in detail, showing a sketch of the floor plan and photographs of the striking exterior and beautiful interior appointments, including the comfortable club-lounge atmosphere of the waiting room.

●

C. T. C. ON P. R. R.: Train movements on the Red Bank, Pa.-Oil City section of the Pennsylvania's Pittsburgh-Buffalo line have been greatly expedited by the substitution of centralized traffic control for operation by timetable and train orders and by manual block. The C. T. C. installation is described in an illustrated article herein. A feature of the train chart is the working of the pens which it has for each of the OS switch detector sections. When the switch involved is in normal position, the pen moves to the right and stays there as long as the OS section is occupied, but if the switch is reversed for a train to enter or depart from a siding, then, when the OS section is occupied, the pen moves to the left. This recording, not made on previous chart mechanisms of this type, is an aid in checking later to determine which trains took sidings.

●

STAR FOR WILLIAMSON: It's now Brigadier General William J. Williamson. The chief of the Army Transportation Corps' Traffic Control Division was nominated by President Roosevelt for promotion from the rank of Colonel on September 12.

●

STOVER TO C. & E. I.: Holly Stover, vice-president of the Gulf, Mobile & Ohio and federal manager of the Toledo, Peoria & Western, has been elected president of the Chicago & Eastern Illinois. He succeeds Charles T. O'Neal who will become chairman of the board. The careers of both are outlined in one of this issue's feature articles. The new executive set-up becomes effective October 1.

●

T. A. A. vs. A. M. A.: The Transportation Association of America has replied to the Automobile Manufacturers Association's recent statement opposing T. A. A.'s so-called "integration program" for the transportation industry. The reply, after charging that A. M. A. misrepresented the program, goes on to point out that the automobile manufacturers have gone in for a bit of "integration" themselves; they make vehicles for highway transportation, airplanes, Diesel locomotives, and Diesel engines for ships. Also T. A. A. presents a bill of particulars to refute A. M. A. contentions regarding the "effectiveness" of the present competition in the transport field. And it asks how the auto builders would like to have the government lease, to competing manufacturers, surplus plant facilities to yield the same rate of return as airlines pay for the use of airports, all property taxes to be waived, of course.

●

SLIM PICKINGS: Data recently published by the I. C. C.'s Bureau of Transport Economics and Statistics show how operating revenues and "other income" of the railroads have been distributed in the past five years—in comparison with the distribution during pre-war periods. An editorial herein looks over the figures and finds that the share of the equity holders, as shown in dividends, was almost two-thirds less in the 12 months ended with last June than in the 1925-29 period of economic health and progress. It is thus no wonder that railroad stocks are now selling at less than two-thirds the average price which they commanded in the 1925-29 period. Meanwhile the tax collector has cut himself a much larger slice—as he has, of course, from the revenues of other industries. But railroad taxes not only represent the carriers' share of war expenses; they also include tens of millions with which the government proposes to construct facilities for railroad competitors to use without charge or for fees representing but a fraction of the costs.

INVADING RAILROADERS: Soldier railroaders of the Second Military Railway Service were on the Normandy beaches shortly after D-Day, and they soon had the railway situation there well in hand. Operating at times under direct fire of enemy artillery and snipers, they quickly repaired roadbeds, reconstructed bridges, and rendered impotent the booby traps and mines which the Nazis had left in rolling stock and along the lines. It was not long after the capture of the port that trains were operating from Cherbourg. An account of this successful follow-through from well-laid plans appears back in the news pages. And another story there reports a radio interview wherein high Transportation Corps officers gave assurances that the soldier railroaders are still keeping pace with the Allied advances, being all prepared to operate the German railroads.

●

WOULD TRUCK BY RAIL: A Denver trucker has asked the I. C. C. to require the Burlington, Santa Fe, and Union Pacific to provide special facilities and rates for handling his semi-trailers on flat cars between Chicago, Denver, and Los Angeles. The complainant claims for himself an important role as a carrier of war freight and whines about the critical rubber situation. The Burlington and Santa Fe have thus far given him the silent treatment, while the U. P. has advised that it cannot entertain the proposal.

●

FIRST FAIRBANKS DIESEL: The first unit of the complete line of Diesel-electric locomotives which Fairbanks, Morse & Co. plans to build in sizes up to 6,000 hp. for all classes of service is the 120-ton, 1,000 hp. switcher, with Westinghouse electrical equipment, delivered last month to the Milwaukee. One of this issue's illustrated feature articles describes the unit in which the objectives sought included high efficiency, low maintenance, smooth operation over a wide range, easy accessibility for inspection and repairs, and high availability. No particular innovations in design were introduced, so the locomotive, from the deck down, represents well-tested construction.

●

AIR TRAVEL CHEAPER?: An Air Transport Association economist, Richard H. Rush, has calculated that a person can now fly from New York to Los Angeles for $2.43 less than the overall cost of travel by rail, giving air transport no credit for the value of 17 hours of "business time" saved the traveler. If that time is appraised at $2.50 an hour, air travel becomes $40.87 cheaper. Mr. Rush feels that the air lines can look forward to taking much first-class passenger business away from the railroads, especially on daylight runs of more than 150 miles and night runs of more than 600 miles. He does not feel that railroad coach business is seriously threatened, but he sees no important railroad role as feeder to air lines. Mr. Rush's survey is reviewed in an article beginning on page 437.

OKONITE RESEARCH DEVELOPMENT
REPORT NO. 23-Y

August 12, 1944

REPORT AFTER 1 YEAR'S EXPERIENCE ON THE EFFECT OF REPLACING NATURAL RUBBER WITH GR-S(BUNA S) IN OKOLITE INSULATION FOR ELECTRICAL CABLES

We have stated in the past that we are fortunate that the results obtained are so generally satisfactory when Buna S is substituted for natural rubber in Okolite insulation. This is largely because of the fact that natural rubber was a relatively minor ingredient of Okolite and the substitution of Buna S constitutes a smaller change in the compound than in the case of rich rubber compounds. The result is that Okolite S, as we will call Okolite when made with Buna S, is much more like Okolite made with natural rubber and can be expected to be more likely the same in service than in the case of compounds which require greater changes in their composition in order to substitute GR-S or Buna S synthetic rubber for natural rubber. It is obvious that any lack of uniformity in GR-S synthetic rubber will have a greater effect on the properties of an insulation compound in proportion to the amount of GR-S in the compound.

ELECTRICAL STRENGTH: Experience in the manufacture of wires and cables made with Okolite S insulation on a commercial production basis is now approaching one year. The results have been highly satisfactory. The Okolite S insulated conductors are subjected to the same high voltage a.c. and d.c. tests as were used for Okolite made with natural rubber. These high voltage tests are the most severe in use in the wire and cable industry. They help to provide assurance to our customers and to ourselves against weaknesses or defects in the insulation.

INSULATION RESISTANCE: A careful review of our routine test results obtained on all of the Okolite S insulated wires and cables made since January 1, 1944, shows that we can now dependably meet minimum megohm values based on a constant of 10,560 for megohms per 1,000 ft. This is the minimum value that we guaranteed for Okolite made with natural rubber.

WEATHERING: Samples of Okolite S insulated conductors without any coverings over the insulation, have been exposed to the sunshine and weather in our proving ground for the past nine months. The Okolite S insulation is still in excellent condition, its outer surface being practically free from checking, and it is equally as good as the Okolite made with natural rubber. We regard the behavior of Okolite S in this sunlight and weather exposure test as a good indication of stability and long life.

MOISTURE RESISTANCE: Tests were made on cable immersed in water for periods up to one year. We feel that our Okolite S insulation as now manufactured with Buna S is equal in moisture resistance to Okolite manufactured with natural rubber and possibly with further experience this can be still further improved.

The table below shows a comparison of important characteristics of Okolite S versus Okolite made with natural rubber. The results given in this table are as obtained in numerous tests made on the two compounds. It will be observed that there is no important difference in any of the properties covered by the table.

PROPERTIES OF OKOLITE INSULATION NATURAL RUBBER VS. GR-S

	Okolite (Natural Rubber)	Okolite S (GR-S)
Tensile Strength-p.s.i.	525	525
Elongation-inches	2 to 8	2 to 8
Resistance to Cold	Fair	Fair
Heat	Excellent	Excellent
Ozone	Excellent	Excellent
Oil	Fair	Fair
Sunlight	Good	Good
Flame	Poor	Poor
Moisture	Excellent	Excellent
Dielectric Strength-Volts/Mil	400-500	400-500
Insulation Resistance Constant (1000ft.,60°F)	15,000	14,000
Dielectric Constant (60 Cycle-80 Volts/Mil)	4.2	4.0
Power Factor-Per Cent (60 Cycle-80 Volts/Mil)	3.0	3.0

We can feel assured, as far as can be determined by such limited experience as we have obtained in 1 year of actual production, that Okolite S has all of the excellent properties and high quality of Okolite made with natural rubber.

OKOLOY Corrosion-Resistant Conductor Coating: Another important point in connection with Okolite S insulated wires and cables is the fact that the conductor coating is our standard Okoloy with which there have been many years of satisfactory service experience.

The above report is excerpted from a recent comprehensive report of the Research Laboratory of The Okonite Company, Passaic, N. J., manufacturers of insulated wires and cables.

RAILWAY AGE

Business and Unemployment—the New Deal's Record

Governor Dewey hit the New Deal in its most vulnerable spot when, in the opening speech of his campaign, he attacked it for having *protracted* the depression and unemployment. The *Railway Age* began criticizing it on this ground in the summer of 1933, and continued to do so until expenditures for war began in 1940 changing the nation from a peace to a war basis. The most important issue in the current political campaign is whether abolition or continuance of New Deal policies is more likely to cause prosperity and large production and employment in the post-war period. Therefore, review of the New Deal's pre-war economic record is desirable, and will be enlightening to those wishing to be enlightened.

Throughout the period from the termination of World War I to the year 1942 the trends of the index of production and trade of the Federal Reserve Bank of New York, and of the *Railway Age's* index of freight car loadings, almost exactly paralleled each other year by year, and even month by month; and, statistics of carloadings always being available first, *Railway Age* constantly used them to show changes in the trend of general business. Therefore, the following quotations from editorials published in *Railway Age* on the dates mentioned are significant:

Recovery Began in 1932—Arrested in 1933

1932—September 17: "Freight car loadings for recent weeks indicate that a real improvement in general business has begun." October 29: "The increase in carloadings between June and October was *seven times* as great as between the same months in 1930 and 1931."

1933—March 25: "A large majority of the banks have now been reopened . . . Increase of public confidence has been shown by innumerable public and private expressions." July 15: "The improvement in general business which began late last summer, which was arrested in the first quarter of this year by the banking and credit situation, and which was resumed after the banking moratorium, is continuing at an accelerating rate. Freight car loadings, which were 2 per cent greater in May and 15 per cent greater in June than in 1932, were almost 30 per cent greater in the week ended July 1 than in the corresponding week of 1932." September 9 (after New Deal "recovery" legislation had been passed): "General business . . . improved more than seasonally in April, May, June and July, and then improved less than seasonally in August." October 21: "The improvement in business that occurred during the last third of 1932," and that was resumed in 1933 after reopening of the banks "was obviously due to natural causes. What has caused the decline since July? The only new and important influences . . . have been the administration's revolutionary policies."

N. R. A. Destroyed—Recovery Resumed

1934—August 11: "In the twelve months since the 'New Deal' got into effective action the volume of business has increased in five months and declined in seven months, the final outcome being a net loss of 7½ per cent in carloadings." September 22: "There is a way to renew the revival of business. This is partially or wholly to overthrow the policies principally responsible for the cessation of recovery."

1935—June 8: "The Supreme Court's decision (destroying N. R. A.) probably will prove the best thing for general business and all classes of the people that has occurred since the banks were closed and reopened in March, 1933." December 7: "The improvement in general business which has been occurring throughout the last four months has been real and substantial."

1936—October 24: "The third period of recovery began in August, 1935, and had continued without interruption until the middle of October, 1936. . . . There had occurred only one great change affecting business, . . . destruction by the Supreme Court late in May, 1935, of N. R. A., the most important policy of the New Deal."

Violent Recession in 1937-1938

1938—January 8: "Full recovery was prevented from adoption of the New Deal's emergency legislation in 1933 until May, 1937; and there has since occurred the severest decline of production, construction and distribution ever known in the same length of time."

1939—April 8: "Meantime, the depression—or is it still the 'recession'?—drags its weary length along, keeping the country's total volume of production 30 to 40 per cent less than it averaged in the five years 1925-1929." April 29: "Statistics of the League of Nations . . . show that . . . recovery began in every leading country in the world in the latter part of 1932 . . . that in 1937 there had been less recovery in the United States than in almost any other important country . . . and that owing to the 'recession' production and employment in this country were relatively smaller in 1938 as compared with 1929 than in any other leading country." May 20: "The New Dealers got their 'spending for recovery' well started in the latter part of 1933 and have done such a job of it since as the world never saw before or elsewhere. . . . It would require an increase (in national income) per capita of almost 70 per cent to restore it to what it was in 1929." November 25: "The improvement which began in the last one-third of 1932 would have continued . . . full recovery would have been accomplished by 1935 and . . . the last five years would have been a period of great prosperity if there had not been unprecedented causes of the unprecedented and repeated 'recessions' that have since occurred."

Depression and Unemployment Continue in 1940

1940—January 6: "The principal question that concerns the railroads and every other industry is whether finally business in the United States will recover from the depression and advance to new high levels. . . . The principal thing the matter with the railways is the principal thing that is the matter with business as a whole—viz., the continuance of depression." June 8: "For ten years the statesmen, the business, agricultural and labor leaders, and the people of the United States have been confronted with the problem of economic recovery. They have made no progress toward solving it. Allowing for differences in prices, average annual national income per capita was the same in the five years ending with 1934 and in the five years ending with 1939—$486."

The foregoing is the record as actually published in *Railway Age* of almost eight years from the late summer of 1932 until large government expenditures for war were begun in June, 1940. The number of unemployed in January of the nine years 1932-1940, in-

clusive, according to the National Industrial Conference Board, was: 1932, 11,552,000; 1933, 14,514,000; 1934, 12,145,000; 1935, 11,771,000; 1936, 10,338,000; 1937; 8,910,000; 1938, 11,499,000; 1939, 11,989,000; 1940, 10,991,000.

The Stockholders' Declining Share in Railroad Earnings

The "Monthly Comment on Transportation Statistics" by the I. C. C.'s Bureau of Transport Economics and Statistics is a timely "attention-caller" and stimulant to reflection on economic developments and trends, perusal of which no one seriously interested in railroads should deny himself. Summaries of these monthly statements are published regularly in our news pages when they appear.

Among other interesting information, the September issue of this "Monthly Comment" contains a table, reproduced herewith, showing how operating revenues and "other income" of the railroads have been distributed during the past five years—in comparison with the distribution during pre-war periods (both of prosperity and depression). The comparative "shares" of the different interests which combine to provide railroad service are significant—because any notable shift (particularly a downward shift) in the relative proportion of any of the factors may have a limiting effect on the future supply of that element; and hence on the ability of the railroads to function effectively.

Of the years whose results are shown in the table, those of 1925-29 are most nearly "normal." Then there was no war, no depression, no deficit spending by the government to keep the economy going. Wages were determined, largely, by collective bargaining, but without the government having its foot on the scales of justice to tip the balance for or against either party. Practically everybody who wanted to work was working, and the prosperity of all Americans was steadily advancing. The credit of the railway industry was good—and, generally speaking, capital desired for improvements could be obtained by the sale of stocks or bonds, or from savings from earnings, whichever alternative appeared the most attractive.

In those years, as this I. C. C. tabulation shows, 40.6 per cent of railroad revenues were expended for wages and salaries; 30.9 per cent for materials; 5.9 per cent for taxes; 10.8 per cent for fixed charges; 6.6 per cent for dividends; 5.2 per cent for surplus. Such being the shares of railroad revenues in a period of health and progress for all elements which co-operate to provide the service, any marked departure from such distribution needs persuasive justification or correction if the well-being of the industry and necessarily concomitant health of all its parts is the objective.

The relatively slight decline (about 9 per cent) in the share assigned to wages and salaries from the 1925-29 average to the 12 months ended June 30, 1944, is accounted for by the fact that the railroads need 100,000 more men than they can now employ, because of so many persons being required elsewhere in the armed forces and otherwise to support the war effort. The change in the share of revenues representing outlays for materials would be insignificant—except for the fact that the railroads would now be spending a great deal more for such purchases if the goods were available. The decline in the share of revenues going for accruals to fixed charges would be a wholly salutary development if the share of equity-holders were rising proportionately, to reflect their larger participation in proprietorship. Actually, however, the share of the equity-holders as shown in dividends was *almost two-thirds less* in the 12 months ended with June this year than in the pre-war period of economic health and progress. It is no wonder that railroad stocks are now selling at less than two-thirds the average price which they commanded in the 1925-29 period. One of the main reasons for this decline—as is plainly implicit in the table—is the enormous increase in the share of revenues going to the tax collector.

All industries, of course, and not just the railroads, are paying high taxes—but the taxes collected from other industries are not being used by the government to build socialized facilities to compete at below-cost prices with them. Railroad taxes not only represent the carriers' share of war expenses, but they also include tens of millions which the government proposes to use to construct super-highways, waterways and airports—to be used by railroad competitors either without charge or for fees which represent but a fraction of their cost.

HOW REVENUES OF CLASS I RAILROADS ARE DIVIDED

(Amounts in Millions)

Item	Year ended June 30, 1944	Calendar year 1943	1942	1941	1940	5 year average per annum 1935-1939	1930-1934	1925-1929
Operating revenues and other income	$9,553	$9,256	$7,649	$5,524	$4,466	$4,019	$4,055	$6,520
(Per cent)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)
Wages and salaries	3,525	3,340	2,767	2,198	1,856	1,716	1,709	2,647
(Per cent)	(36.9)	(36.1)	(36.2)	(39.8)	(41.6)	(42.7)	(42.1)	(40.6)
Materials and other operating expense, and operating rents	2,770	2,505	2,015	1,603	1,362	1,270	1,268	2,011
(Per cent)	(29.0)	(27.1)	(26.3)	(29.0)	(30.5)	(31.6)	(31.3)	(30.9)
Tax accruals	1,851	1,849	1,199	547	396	316	283	382
(Per cent)	(19.4)	(20.0)	(15.7)	(9.9)	(8.9)	(7.9)	(7.0)	(5.9)
Fixed charges and other deductions before net income	671	688	765	675	662	669	695	707
(Per cent)	(7.0)	(7.4)	(10.0)	(12.2)	(14.8)	(16.6)	(17.1)	(10.8)
Dividends	222	217	202	186	159	135	232	433
(Per cent)	(2.3)	(2.3)	(2.6)	(3.4)	(3.5)	(3.4)	(5.7)	(6.6)
Remainder for reserves and surplus	514	656	700	314	30	d 87	d 132	340
(Per cent)	(5.4)	(7.1)	(9.2)	(5.7)	(0.7)	d 2.2	d 3.2	(5.2)

d Deficit.

Increasing Interest in Railroad Welding

The placing of war orders in locomotive and car builders' plants has probably accelerated a changeover which was already occurring in the construction methods used in building locomotives and cars. Before the war many of these plants were increasing the use of welding in equipment ordered from them; with the experience gained on ordnance and other contracts it is likely that welding will be even more extensively used in post-war days. Ample facilities, including welding machines, annealing furnaces and large-capacity positioners, are now in use by a large force of skilled welders in these various plants. Trained supervisors and inspectors have had a wealth of experience in complying with the very rigid specifications set down for war-required products. It appears certain that these facts will have a significant bearing on design changes and that advantage will be taken of the opportunity offered to specify the use of welding wherever its known values indicate the desirability of its employment.

War-time use of welding has not been confined alone to the builders' plants; material shortages and necessary shop manufacture of many items have increased its use in railroad shops also. Accelerated shop schedules and lack of materials have resulted in its increased use in the repair and reclamation of essential structural and operating parts. The Mechanical Division has approved the reclamation of cast-steel truck sides and couplers by welding and has otherwise extended the range of its controlled application. Many of its committees have had occasion to study problems which involved the possible adoption of welding in repair or reclamation. A healthy interest has been created which may result in the railroads again assuming a leading position in a field where they pioneered.

Railroads gave a great initial impetus to welding as a shop tool but then lagged behind in extending its use as accumulated experience in other fields justified its extension. Individually, a number of roads went far in exploring its possibilities; others have hesitated even to follow procedures which some roads proved to be sound in both an engineering and service sense. What has been true of the mechanical departments generally has also been true of individuals. There is evidence to support the belief that railroad men have not been as interested as they might in the study of welding as an engineering problem. Fewer than twenty-five members of the American Welding Society come from the mechanical departments of the United States and Canadian railroads although this is the body which is the recognized authority in welding research and the only engineering group specifically interested in the study of welding procedures and applications.

This, however, is not a proof that either interest or competence is lacking. Much has been accomplished in the study of welding problems and extension of various welding procedures in the railroad shops of this country and Canada. Further railroad cooperation through the Mechanical Division will be valuable in the years to come when we can expect to see advantage taken of the general knowledge of welding which is now accumulating in so many industries. New metals and alloy steels, still unfamiliar to the railroad man, are "old stuff" to others and their knowledge will be helpful in establishing standards relative to their use in welding applications on locomotives and cars. There is hope that studies resulting from the present interest in welding can be as successfully correlated as have been other problems in the railroad mechanical field.

Good Housekeeping

In discussing the prevention of fires in the *Railway Age* of August 5, page 226, it was suggested that *poor housekeeping* is responsible, directly or indirectly, for more fires than any other cause. A. B. Wilson, superintendent motive power of the Southern Pacific Company at Sacramento, Cal., in a recent bulletin emphasized the importance and the practical value of *good housekeeping*. He tells the story of a visit of an I. C. C. inspector to a small roundhouse.

The inspector sat down and started to talk about most everything else than the business at hand. The foreman, who seems to have had an unwarranted fear of federal inspectors in general, was on pins and needles, wondering what the inspector would find and report. Finally he said, "When are you going to inspect these locomotives?" The inspector replied, "I am in no hurry. When I go to a roundhouse and it is nice and clean and in order, I do not expect to find many defects. When I find a place that is dirty and untidy, I get out all the pencils I have and sharpen them, because I know I am going to need them."

Mr. Wilson points out that good housekeeping is not only the best insurance against fire and accident, but that clean, attractive surroundings indicate good supervision and stimulate a better and higher morale in the organization. This, in turn, insures maximum production. The heart of his message, however, is in his insistence that keeping a plant clean and orderly is not necessarily laborious or expensive. One careless employee can make enough mess to keep several laborers busy cleaning up after him. The problem, therefore, is one of education and training, so that every worker will have a desire to keep the premises clean.

While this is no simple or easy task, the mere fact that emphasis is placed upon it will in many instances be productive of fruitful results. Special pressure can then be brought to bear upon those careless individuals who find it difficult to conform to habits of neatness and orderliness. The problem is not so much one of cleaning up, but rather, as Mr. Wilson tersely expresses it, to "Stop making dirty conditions that have to be cleaned up."

Tie Plate Design

The fact that there is far from complete satisfaction with most present designs and sizes of tie plates to meet varying track and traffic conditions is of no paricular credit to those on the railways responsible for the design and use of this item of the track structure, but it is encouraging that in recent years those with this responsibility have set out to solve the problem, and are continuing in that effort with every reason to believe that they will succeed.

Contrary to first appearances, the lowly tie plate, which to the uninformed is merely a flat piece of steel of no particular consequence except to distribute the load of traffic over a greater area of the tie, is an item of extreme importance in track structure. While its main function is to spread the rail wheel loads over a greater tie area than the rail is capable of doing, and thus prevent the premature destruction of the tie by crushing or cutting, every trackman knows that there are other important functions involved, including its ability to hold line and gage and, to some extent, to prevent creepage of the rail under traffic or temperature changes.

These fundamental functions call for consideration of the proper length, width and thickness of the plate; of the bottom design to minimize mechanical damage; of the number and arrangement of spike holes to permit its most effective anchorage to the ties with minimum damage to them; and to the rail-holding shoulders to be provided—not to mention the details of correct cant and camber of the rail seat eccentricity, and the metallurgy of the plate itself to produce the results desired, with due regard to the important factor of corrosion. On top of all of these factors, traffic density and wheel loads are to be considered in the design of plates for particular locations, and also the all-important matter of economics, a consideration of large magnitude when the number of tie plates required by the railways annually is taken into account. In fact, if the economic factor could be divorced from all of the others involved in tie plate design, which it cannot be, it is certain that the problem of the designer would be greatly simplified.

No one with a knowledge of the track structure depreciates the many problems that confront track maintenance officers in this regard. In fact, those closest to the problems involved are convinced that present studies should go forward, by both the railways and the suppliers, to the end that the present uncertainties concerning, if not dissatisfaction with, certain types and sizes of plates will be cleared up. At the same time, there are those who believe that, in the interst of the supplier and lowered costs to the railways, there are already too many designs of tie plates in use, and especially too many variations in details, such as punching. To the extent to which this can be proved to be true, it should be given consideration by the railways, possibly in the same manner that they reduced sharply in 1943 the large number of rail sections for which rolls had to be maintained by the rail mills. Even among those who hold this view, there is no thought that present efforts to improve designs should be minimized or retarded, but rather that many present little-used or outmoded designs can be given up in the interest of the producer, an interest which may, directly or indirectly, be in the interest of the user as well.

Freight to the Pacific

At Los Angeles recently representatives of transcontinental railways presented a symposium before the Pacific Railway Club as to the manner in which wartime freight for the Pacific Coast has been handled. This symposium brought out strikingly that no elaborate or complicated formulas were needed to accomplish this seemingly impossible task. The answer to the extremely vexing problem was found in complete co-operation among the western railways.

Each of the railways, of course, individually contributed a great deal to this vital part of the nation's war effort. They made vast improvements and spent very large sums to assure that the flow of traffic be handled efficiently. The situation was complicated by the fact that in peace time the preponderance of traffic on all of these roads is eastbound, whereas today the exact reverse is true. All of the railroads bought new and efficient motive power insofar as they were able to do so under restrictions imposed by material shortages. Centralized traffic control was inaugurated in many places over large stretches of track so that the capacity of the lines might be increased. Many hundreds of new passing sidings were built, and the length of the existing sidings was extended so as to improve the efficiency and speed with which the freight was handled. Auxiliary running tracks were constructed around many of the larger intermediate yards so that, when necessary, trains could be run around the yard rather than delayed by handling through the yard. Some additional double track mileage was constructed, new yards were built at strategic locations and the capacity of existing yards was increased by the construction of additional tracks.

All of this assisted materially in the movement of traffic but, in the final analysis, it was co-operation between the western railroads that saved the day. This co-operation has been under the direction of W. F. Kirk, with headquarters in Chicago. It is true that Mr. Kirk is agent for the Office of Defense Transportation and for the Interstate Commerce Commission, but it should also not be forgotten that he is agent for the Western Association of Railway Executives as well. It is ironic, to use a charitable adjective, that the W. A. R. E., which has been so active and effective in performing a vital war-time task, should be attacked by Messrs. Biddle and Berge of the Department of Justice at the very time when, from all indications, this task promises to become more vital and more necessary to winning the war than it has been even in the past.

Exterior View of the Station from the Track Side. Note the Random Ashlar Masonry and Flat Overhanging Roof

Burlington Builds Distinctive Station at Burlington

Attractive structure, built despite material restrictions, is outstanding, with modern lines and efficient layout

THE Chicago, Burlington & Quincy has recently completed a large passenger station of advanced design at Burlington, Iowa. This station, which is of reinforced concrete and masonry construction, was planned to provide maximum efficiency, with beauty and comfort for patrons, as well as space for district operating, traffic and engineering offices. This structure is of striking appearance, with beautiful interior appointments, and is a fitting complement to the road's streamlined Zephyr trains which serve this station. It is another example of what can be done in attractive, modern station construction with a minimum use of critical materials.

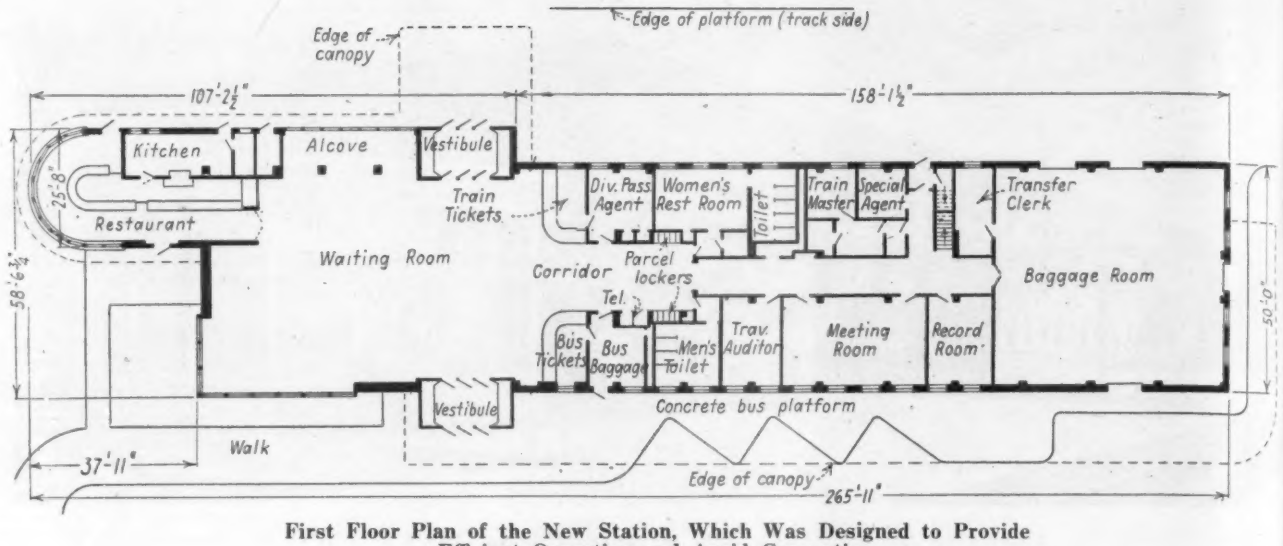
Old Station Destroyed by Fire

The new passenger station replaces a large 2½-story brick station built in 1882 and destroyed by fire in January, 1943, which at one time housed the general offices of the railroad. The old station, which was representative of an outmoded architectural period, had a steep pitched roof, numerous gables, a tower, and much decorative trim reminiscent of the Victorian era.

After the fire, it was decided to build a new and modern station as soon as possible because Burlington is an important terminal and junction point, being at the intersection of main lines between Chicago and Denver, Colo., and between Minneapolis, Minn., and St. Louis, Mo., over which streamlined Zephyrs and Zephyr-Rockets operate daily. A considerable amount of passenger and heavy baggage, express and telegraph business is handled at this station. A large government ordnance plant nearby has also greatly increased the normal volume of traffic. Burlington is also a headquarters for a general superintendent, a division engineer, a district maintenance engineer and division freight and passenger agents, whose offices were located in the old passenger station. In addition, the old station served as an important terminal for the Burlington Transportation Company (motor transport subsidiary of the railroad). All these factors entered into the decision to rebuild at once, despite government wartime restrictions on the use of certain building materials.

Because of the importance of the city and because its name, Burlington, is synonymous with that of the railroad, it was decided that this structure should represent, in so far as possible, the finest in modern station design and architecture. Accordingly, plans were drawn and permission requested for the use of materials from the War Production Board. In the design of the station, the use of critical materials was avoided as much as possible by using reinforced concrete and stone masonry construction. With only minor changes, the plans were approved and priorities were granted by W. P. B. in May, 1943, and work was started shortly thereafter.

The new station was built on substantially the same location as the former structure. The tracks at this point run nearly due north and south along the west bank of the Mississippi river, and the station is located on the west side of the tracks, overlooking both the tracks and the river. The business district of the city is located just behind, or west, of the station. With the exception of the restaurant, the station is a two-story structure approximately 228 ft. by 50 ft., located parallel to the



First Floor Plan of the New Station, Which Was Designed to Provide Efficient Operation and Avoid Congestion

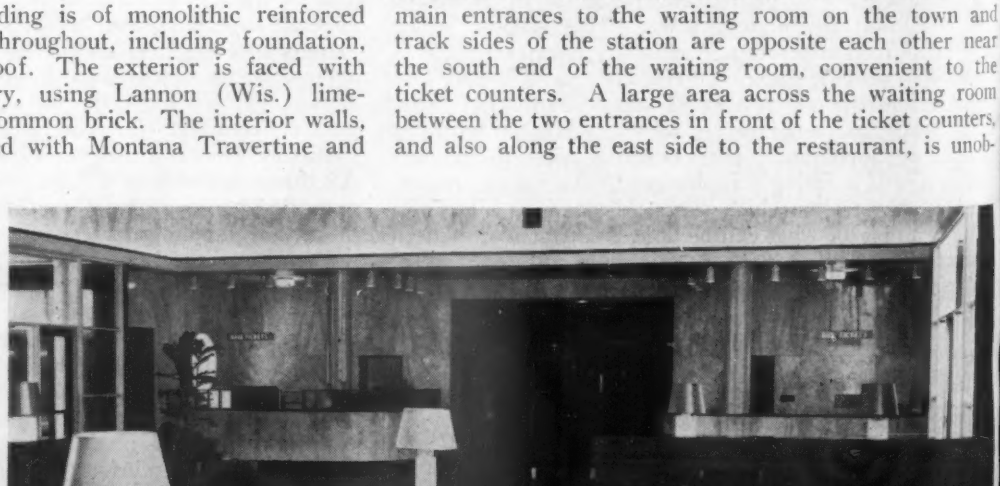
tracks. The waiting room portion is eight feet wider than the remainder of the building and a one-story portion for the restaurant, 38 ft. long and 26 ft. wide with a rounded end, projects northward from the northeast corner of the station.

To add to the streamlined appearance of the station, a flat overhanging roof extends beyond the walls of the main building and restaurant, with canopies extending over the doorways and a bus loading platform. The large windows in the northwest corner of the station, which extend the full two-story height of the building, and the rounded end of the restaurant, which is also composed almost entirely of windows, give the station a distinctive appearance.

General Plan

In general, the building is of monolithic reinforced concrete construction throughout, including foundation, floors, columns and roof. The exterior is faced with random ashlar masonry, using Lannon (Wis.) limestone backed up with common brick. The interior walls, of hollow tile, are faced with Montana Travertine and black marble in the waiting room and in the restaurant, and plaster in the offices. With the exception of plumbing and electrical work, practically the only critical materials used were concrete reinforcing bars and steel lintels for the windows, and the latter were second-hand. Wood sash and millwork were used for all exterior windows. The use of critical materials for the plumbing and electrical work was met to some extent by obtaining plumbing and electrical fixtures released from other buildings, and the use in a number of cases of cast iron and plastic units instead of steel or brass. The use of reinforcing in concrete was avoided in walks and some other places where it was not absolutely essential.

The station has a relatively simple arrangement, designed to provide efficient operation and to avoid congestion. The ground floor of the station may be divided roughly into three parts—restaurant and waiting room, office section and baggage room. The waiting room at the north end is approximately 56 ft. wide by 85 ft. long and occupies the full height of the building (two stories). Included in this room are the railway and bus ticket offices, which are located in the southeast and southwest corners of the room, respectively. The entrance to the restaurant is in the northeast corner of the room. The main entrances to the waiting room on the town and track sides of the station are opposite each other near the south end of the waiting room, convenient to the ticket counters. A large area across the waiting room between the two entrances in front of the ticket counters, and also along the east side to the restaurant, is unob-



View of Waiting Room from Northwest Corner, Looking Toward the Ticket Counters

structed for the convenience of traffic to and from trains and to and from the restaurant.

From the south end of the waiting room, a wide corridor extends south through the center of the station to a baggage room 51½ ft. by 50 ft., which is located at the extreme south end. The public portion of the corridor is 15 ft. wide, extending a distance of 24 ft., and along this portion of the corridor are located telephones, parcel checking lockers and entrances to a women's rest room and a men's wash room. The remainder of the corridor through the first floor office section is 8 ft. wide. Double doors at the end of the public part of the corridor separate it from the remainder.

On the east side of the corridor, behind the railway ticket counter, is the division passenger agent's office. Next is the women's rest room and toilet room, and beyond that offices for the trainmaster and special agent, a hall and doorway to the track side of the station, a stairway to offices upstairs, and an office for the baggage transfer clerk, adjacent to the baggage room.

On the west side of the corridor, behind the bus ticket counter, is a bus baggage room and office, a men's toilet room, an office for the traveling auditor, a meeting room, and a record or file room.

Large, Well Arranged Waiting Room

The waiting room is the most imposing part of the station. The height of the room and the wide unobstructed passageways between the entrances in front of the ticket offices and from the corridor to the restaurant, together with ample light from the windows and doorways, provide an impression of spaciousness. Adding to this, the interior decoration, with its golden buff walls of Montana Travertine and trim of black marble, together with drapes, furniture, potted plants and lighting arrangement, provide an atmosphere of beauty as well as spaciousness.

The floor of the waiting room is a dark grey mottled terrazzo containing a touch of green. It is subdivided into 2½-ft. squares by thin aluminum strips, which were set on edge before the terrazzo was poured. As mentioned previously, the walls are of polished Montana Travertine, laid with the grain matching, thus providing an unusual effect similar to large matched panels of fine woodwork. The base-board trim is black asphalt, while black marble is used for the trim around the doorways and the entrance to the restaurant. Between the doorway to the tracks and the entrance to the restaurant is an alcove with windows overlooking the tracks. The entire wall in this area and large square pillars are faced with black marble up to the top of the windows.

The entrances have large glass-enclosed vestibules, that on the track side extending into the station waiting room and that on the town side extending out from the building toward the driveway. These entrances and the alcove windows provide exterior light in the daytime, in addition to that furnished by the large two-story window at the northwest corner of the waiting room, which is one of the outstanding features of the station. This window occupies half the wall space on the west side of the waiting room and nearly a third of the wall space on the north end.

The roof is supported at this corner of the building by two large cylindrical concrete pillars, located just inside the window. These pillars were wrapped with mesh and finished with plaster. Similar pillars are located at the corners of the railroad and bus ticket counters and on each side of the main entrances. The ceiling is faced with 12-in. squares of acoustic-tile.

The northwest corner of the waiting room contains lounges, chairs, etc., for the convenience of waiting passengers. This section of the room looks out through the large two-story window upon a landscaped park north and west of the station. It is separated, in part, from the remainder of the waiting room by banks of radiators, which are attractively concealed with metal covers capped with black marble, upon which table lamps are mounted. Other radiation is concealed in the walls.

The Restaurant, As It Appears from the Doorway to the Waiting Room

The remainder of the furnishings in this area of the waiting room consist of upholstered oak chairs, a long upholstered double settee with end table and table lamps, settees against the wall and radiator covers, floor lamps, potted plants, small tables with black composition tops, black ash trays, etc. The furniture is tastefully arranged for the convenience and privacy of small groups.

Club-Lounge Atmosphere

The furniture upholstery is green and cream and the large two-story windows have light yellow antique cotton-rayon drapes. In addition, the cylindrical pillars are painted a light yellow. The window sash and mullions are painted white. The entire color scheme of floor, walls and furnishings gives the waiting room a comfortable club-lounge atmosphere.

The ticket offices, although only one story in height, are actually part of the waiting room, being separated only by low counters with rounded corners. These counters have a black composition top. Behind the counters are built-in ticket shelves, filing drawers, etc. All of the trim and furniture in the ticket offices is walnut.

Bulletin boards for trains and buses are located on the walls between the town entrance and the bus ticket counter. These bulletin boards are glass-enclosed and have folded black felt backgrounds with removable white letters.

Just to the right of the town entrance, engraved in large letters in the travertine wall, is the following inscription:

"Here in 1852 the Burlington and Missouri River Railroad was incorporated.

"In 1855, Chicago, Burlington and Quincy rails from Chicago reached East Burlington.

"In 1868 the Burlington Bridge across the Mississippi River replaced the car ferry. From 1881 to 1901 Charles E. Perkins of Burlington was president of Burlington System Lines.

"In 1887, George Westinghouse perfected the air brake on West Burlington Hill.

"In 1934 the Burlington Zephyr, first Diesel streamlined train

North End of the Waiting Room, as Seen from the Corridor Between the Ticket Counters. Note the Two-Story Windows and Drapes at the Left and Entrance to the Restaurant on the Right

in America, was exhibited here, and in 1935 service to St. Louis by the Mark Twain Zephyr was established."

The restaurant is an unusually attractive room. It is entered from the waiting room through two doors with solid glass panels and the remainder of the partition between the restaurant and waiting room is also of glass, affording a complete view of the interior from the waiting room. The restaurant also has an outside entrance from a sidewalk on the west side. This room has a terrazzo floor and, as previously mentioned, the end is circular in shape, composed entirely of large windows overlooking the landscaped area at the north end of the station. The roof at the end of this room is supported by two concrete pillars near the north end of the circular section. A circular upholstered settee occupies the space below the windows at the end of this room and a series of small tables, with black composition tops, are ordinarily placed in front of the settee. In the center of the room is a lunch counter with a circular end and with individual stools. The southeast corner of the restaurant is partitioned off for the kitchen, storage and a fan room. The walls are faced with black marble and the ceiling is of acoustic tile. This room also contains a magazine and newspaper stand, a cigar and candy counter and a baggage checking counter.

Recessed Lockers and Phone Booths

The decorative motif and color scheme in the restaurant is similar to that in the waiting room. The counter is green with a black composition top. The settee and stools are of green leather. The window sash and mullions are painted white and the windows have yellow draperies. The pillars are also painted yellow.

The public corridor at the south end of the waiting room is finished in the same manner as the waiting room, with a terrazzo floor, black asphalt base-board, travertine walls and acoustic tile ceiling. On each side are parcel checking lockers inset in the wall, with walnut trim. The telephone booths are also inset. These booths are sound-proofed with Presdwood, have walnut trim and do not have doors.

The women's rest room has a floor of large black and green asphalt tile, plaster walls painted a buff color, yellow curtains, green settees, a large mirror and walnut doors and trim. The women's toilet room, which is entered from the rest room, has a white tile floor and the walls are faced with a light blue Cararra glass to a height of six feet, above which the wall is plaster finish. The men's toilet room has a terrazzo floor, and Cararra glass and plaster walls.

Modern electric signs with glass faces indicate the locations of the ticket offices, toilets, telephones, restaurant, etc. A modernistic electric clock is installed high in the wall at the south end of the waiting room, and just below the clock, behind a walnut grille, a loudspeaker is installed for a public address system.

The remainder of the building, except for the baggage room, is occupied by offices. At the north end of the upstairs office section are a rest room, and a toilet and a locker room for trainmen, extending the full width of the building, and at the south end is the general superintendent's office, also extending across the full width of the building. Between these rooms a corridor 8 ft. wide, similar to that downstairs, extends through the center of the building. Along the east side of the corridor, from north to south, are a men's toilet room, a switchboard and telephone operator's room, a telegraph room, stairs to the first floor, a women's toilet room, a supply room and the general superintendent's private office, which has a private toilet room and shower. Along the west side of the corridor, from north to south, are offices for the staff of the division freight agent, the division freight agent, the engineering department, the district maintenance engineer, and a closet for coats and hats, with an entrance from the main office of the general superintendent.

All the offices and the office corridors have black and green asphalt tile floors, a black asphalt base-board, and plastered walls painted a light buff color. The ceilings of the corridors, and of all offices in which any considerable amount of typing or telephoning is done, are finished with acoustic tile; otherwise they are of plaster.

In both the downstairs and upstairs office corridors, at points where the hall would normally be dark, large panels of glass block were placed in the walls to transmit light into the hall from adjacent rooms. The trim, except the base-board, is walnut, and the doors are of walnut of a plain modern design, each with one large pane of glass in its upper half. Each exterior door is faced with an asphalt tile strip 10 in. wide at the bottom on the inside. Incidentally, an interesting feature about the installation of the asphalt base-board is that it was installed without any intermediate joints. Joints were also eliminated at the corners by heating it with blow torches to bend it. All the office furniture is new or refinished oak or walnut.

Concealed Radiation

The building is heated by steam from a central plant, which enters the partial-basement from a tunnel (because of occasional high water in the Mississippi river, the station was not built with a full basement). All radiation is concealed or enclosed. The station was designed

for future air-conditioning, and equipment for this purpose will be installed when it becomes available after the war.

At the time the station was built, fluorescent lighting fixtures could not be secured but some Zeon lighting was available. This was used for concealed indirect lighting above a cove in the wall of the waiting room. The remainder of the building was equipped with conventional-type lighting of modern design and, in addition, floor and table lamps, as previously mentioned, were installed in the waiting room. Outside the station, the building is illuminated by lights along the side of the station and under the entrance canopies. A large "Burlington" sign of Tymestone covered with gold leaf, on the track side of the building, identifies the station to passengers on trains and is effectively illuminated by spotlights at night.

Outside the Station

The station has five station tracks, with four concrete platforms 855 ft. to 1,025 ft. long. Two of the platforms are protected with reinforced concrete butterfly-type canopies, with reinforced concrete posts, all cast in place and center draining. A wide concrete platform was provided between the tracks and the station. The tracks are ballasted with chatts, with the tops of the rails 6 in. below the tops of the platforms, except at the cross walks where the concrete platforms are depressed. Track drainage is provided by drainage inlets located under the centers of the tracks at intervals of 70 ft., which drain into pipe drainage systems below. There are four plank cross walks 20 ft. wide for passengers and baggage trucking.

The platforms and station track area are lighted by four floodlights on poles, and floodlights on the ends of each canopy light the areas beyond the canopies serving long trains. In addition, the platform area under the canopies is lighted by 100-watt bulbs spaced 19 ft. apart.

At the south end of the station, a large depressed driveway provides room for trucks to turn and back up to a concrete platform, level with the baggage room floor. The baggage room has large overhead doors on all three sides, two facing the tracks, one facing the south platform, and one facing west onto a driveway on the town side.

West of the station, between the station and the street, is a sidewalk or platform; a wide, one-way drive, and a parkway. Traffic in this drive is routed from south to north and a sawtooth platform between the baggage room and station entrances furnishes parking space for buses. This driveway extends northward into a wide paved parking area for private cars, with an exit to the street at each end of the parking area. The remainder of the grounds north and west of the station are attractively landscaped with large elm trees along the street, a lawn, shrubbery and flowers.

Construction Details

One of the features of this station from a construction standpoint is that all of the concrete, including the station roof, canopies, etc., is monolithic, poured in place. The foundations are reinforced concrete walls 1 ft. 1 in. thick on creosoted piling. The first floor is supported by large double-reinforced concrete beams. These beams vary in size from 13-in. by 20-in. to 18-in. by 30-in. for the longer spans, with reinforcing of various sizes from four ⅝-in. round bars to five 1¼-in. square bars. The floor slab varies in thickness from 7 in. to 9 in. and has round ½-in. reinforcing bars spaced on 5-in. or 6-in. centers. Similar concrete beam construction is used to support the second floor. The roof is supported also on double-reinforced concrete beams and has a false plaster ceiling over the waiting room. The roof beams over the waiting room, which have a span of approximately 56 ft., are 20 in. wide by 21 in. deep, are spaced from 5 ft. 1 in. to 6 ft. 1½ in. center to center, and have five 1¼-in. reinforcing bars. The roof slab varies from 3 in. to to 5½ in. in thickness and has ⅜-in. round reinforcing bars spaced on centers varying from 4 in. to 12 in. At the junctions of beams and columns, unit type stirrups were used. All concrete was specified to have an ultimate strength of 3,000 lb. per sq. in. Temperature reinforcing was provided in all floor and roof slabs, consisting of ⅜-in. round bars on 12-in. centers, perpendicular to the main reinforcing. The roof is covered with an average thickness of 3 in. of insulating material, sloped to provide drainage, over which composition roofing and tar and gravel were applied.

The track canopies were poured in place and are supported on reinforced concrete spread footing foundations 6 ft. square and 21 in. thick. The posts are of reinforced concrete 18-in. square. The center-draining, butterfly-type canopy roof was also poured in place for each unit (supported by two posts) with a one-inch expansion gap between adjacent units, filled with caulking compound. The concrete platforms were poured in place on a compacted sand fill.

Half Million for Improvements

A similar but wider canopy, supported on two round concrete posts, extends out from the station entrance toward the tracks. On the west side of the station, at the level of the second floor, a 16-ft. canopy, cantilevered out from the side of the building to protect bus passengers, extends over the town entrance to the south end of the building.

The improvements at this station, including the track work, cost approximately $500,000. The station was designed by Holabird & Root, architects, Chicago, under the direction of H. R. Clarke, chief engineer of the Burlington Lines, and H. G. Dalton, structural engineer. The construction of the station was done under contract by the Lovering Construction Company, St. Paul, Minn.

Aviation Analyst Assays Railroads' Power as Rival

"THERE is little doubt that the airlines are taking passengers from the railroads," begins Richard H. Rush, member of the Air Transport Association's Economic Research and Planning Committee, and special assistant to the president, All American Aviation, in charge of economic planning, in a study of plane and rail travel appearing in the August issue of Air Transport magazine. But as yet, he adds, "the airlines haven't taken a very deep bite out of the total rail passenger business," arguing that were air travel to be abandoned tomorrow, the railroad passenger business would go up only about 4 per cent.

Railroad coach passengers have contributed little to air travel, states Mr. Rush. It is the sleeping and parlor car travel group from which the greater number of airline passengers are drawn. He explains that the average airline trip in 1941 was 367 miles, and the average

distance traveled by parlor car and sleeping car passengers was 379 miles. First class rail fare, with Pullman coach or chair added, comes to about 3.5 cents a mile, with plane fare averaging a little more than 5 cents a mile; but, he explains, "if the plane fare is divided by the greater rail mileage between the same points, it turns out to be about 4 cents a mile."

The Factor of Speed

Perhaps the most important competitive factor in passenger transportation is that of speed, suggests the author. He lists its importance in these kinds of travel: (1) Over long distances where time saved by the plane is substantial (New York to Los Angeles, for example, where the plane time is 20 hr. and that of the train 59 hr., 45 min.); (2) for daytime trips when business time is lost; and, in the case of business trips with greater emphasis being placed on getting to destinations more quickly than for trips of a purely personal nature. Having established his point about speed, the author speaks of probable speed of long distance planes in the near future, as judged by the recent trip of the Lockheed "Constellation" from Los Angeles to Washington in 6 hr. 58 min. Such a transport's average trip speed in the future should be about 300 m.p.h., he believes, while setting the speed of feeder and local line planes at about 100 m.p.h., because of their frequent stops. Postwar speeds of transports, covering distances between 300 and 1,000 miles will probably fall between these two figures—or, about 200 m.p.h.

More "problematical," he says, are future train speeds. Mr. Rush argues that design and power, which govern plane speed, are not prime factors for train speed. Locomotive speed is "practically limitless," he points out, but it is the cost of improvement to roadway which is "the first deterrent to wholesale modernization by the railroads." To carry trains of much higher speed, it would be necessary to reduce curves. There would need be "better drainage, deeper ballast, larger, treated ties and better rails and fastenings." Signals, he explained, would have to be set farther apart, and thousands of miles of single-track completely reconstructed—all of these improvements would be "staggering." He questions whether the railroads can "swing this modernization."

Such changes in roadbed as would be needed to accommodate high-speed passenger trains would be unsuited to freight service, in his view and, on the basis of 1941 figures, Mr. Rush observed that only 14 per cent of total railroad revenue was derived from passenger travel.

"A substantial number of railroads want to lower rail fares drastically after the war," the writer states, and should rates as low as 1 cent a mile coach and 2 cents a mile Pullman be introduced, they will go far in holding rail passengers from changing over to airlines, he believes.

Rails Can Retain Coach Travel for a Time

Present rail coach travel has had no serious threats from planes, it is noted, and this condition should continue for at least a decade. At the same time, Mr. Rush feels the airlines can look forward to taking a considerable number of first-class passengers away from railroads as soon as new planes become available. These will include the business man traveling more than 150 miles on daytime trips and more than 600 on night journeys, and anyone now traveling Pullman for personal reasons on long distance trips (more than 1,000 miles).

In the case of feeder airlines, the author sees no incidental business for the railroads. Using Greensburg, Pa., 32 rail miles from Pittsburgh, as an example, he cites the train time to Pittsburgh as 45 min., with airline limousine time to airport, 50 min., while that of the pick-up plane direct from Greensburg to the Pittsburgh airport is just 13 min.

The author expects that, in time, business firms will calculate lost business time when considering dollars and cents cost of trips. As shown in the accompanying table he estimates the cost of a plane flight from New York to Los Angeles to be 18 per cent less than train cost. And, even with the value of business time omitted, the train advantage would be but $2.43.

A Comparison of Plane and Pullman Charges (New York-Los Angeles) Including 15 Per Cent Tax

Plane		*Train*	
Fare	$153.49	Fare	$111.33
Meals and tips	—	Meals and tips	13.90
Limousine	2.05	Pullman and lower	28.68
Business time	8 hr.	Business time	25 hr.
Total Charges	$155.54	Total Charges	$153.91
Value of time lost at $2.50 per hr.	20.00	Value of time lost at $2.50 per hr.	62.50
Total Costs	$175.54	Total Costs	$216.41

Would Cost Railroads $10 Billion to Modernize

It is the conclusion of Mr. Rush that the railroads "cannot help losing a substantial part of passenger business to the airlines unless they are subsidized in some way." He estimates that to retain present passenger business the railroads must raise about $10 billion. He compares this sum to the "present investment in railroads of about $14 billion and capital plus surplus of about $11 billion." He believes that if they will compete with planes, they must revamp their thinking—they must conceive of maximum speeds of 200 m.p.h., and average trip speeds of 150 m.p.h. "In all probability, this would call for a completely new type of roadbed and track," he points out. "Trains would probably have to be a multiple-unit type, with an engine in each car, to obtain rapid acceleration. At present it takes 34 miles for a 1,000-ton passenger train of 5,000 hp. to accelerate to 100 m.p.h. Steam would probably yield faster than ever to electrics. Diesels, turbines and ordinary combustion gasoline engines," he adds.

If, "By Some Miracle . . ."

Mr. Rush expects the airlines, on the other hand, "after experiencing a few years of financial difficulty after the war, will probably emerge a paying industry, with a definite rate of expansion every year."

His analysis of the overall picture does not entirely eliminate the railroads. For, he reasons, if they "by some miracle, could turn their entire investments, other than land, into cash at book value and start building from scratch it might be possible to construct a system which could rival the airlines in the foreseeable future. This they might do by realizing the advantage of the smaller amount of energy required to pull a load along the ground which rolls on wheels than required to pull it along and at the same time keep it in the air." He concludes, "Whether they can ever reconstruct their system so as to take advantage of this innate economy is a big question."

C. & E. I. Changes Executives

Holly Stover, federal manager of the Toledo, Peoria & Western, elected president to succeed Charles T. O'Neal, who becomes chairman of the board

HOLLY STOVER, vice-president and a director of the Gulf, Mobile & Ohio, and federal manager of the Toledo, Peoria & Western, was elected president of the Chicago & Eastern Illinois by the directors on September 8 to succeed Charles T. O'Neal, who was advanced to the position of chairman of the board. The changes become effective on October 1, 1944.

Underwood & Underwood

Charles T. O'Neal

Underwood & Underwood

Holly Stover

In electing Mr. Stover president, the directors have selected a man with an experience which they believe will be of special benefit to the railroad in securing and handling traffic, and particularly in developing the potentialities of the Southern Illinois and Indiana coal fields. Mr. Stover has spent a large part of his life in the coal business, an industry from which the C. & E. I. now derives about 35 per cent of its freight traffic. In addition, he has been closely associated with railroads and has participated in their management in recent years.

The C. & E. I. operates 925 mi. of main track extending from Chicago to Evansville, Ind., St. Louis, Mo., and Thebes, Ill. The 35 per cent of its freight traffic from products of mines in 1943 represents a substantial decline from previous years when the percentage was as high as 62 in 1924. Manufactures and miscellaneous products constituted 36 per cent and products of agriculture 9 per cent of the 1943 traffic.

The C. & E. I. is an important passenger carrier, participating in the operation of "Dixie" trains to Florida and the South. In 1943, its passenger revenue amounted to $6,554,339 and its passenger-miles totaled 359,708,987.

Due to general business conditions, the C. & E. I. was placed in receivership on April 18, 1933, and was one of the first major roads to emerge from trusteeship. On June 27, 1940, the properties were taken over by a new company. This company has $32,892,500 of capital stock outstanding, and its long term debt amounts to $25,088,656, compared with the $49,612,000 of stock and $34,200,000 of bonds which the old company had outstanding in 1940.

Holly Stover was born on March 12, 1883, at Beckley, W. Va., and was educated in the Coal Schools of West Virginia. He entered railroad service in 1897 as a telegrapher on the Chesapeake & Ohio, and later served in yard service and branch line operations. He left railway service in 1906 to enter the coal business and at present is president of the Stover Smokeless Coal Company and of Holly Stover, Inc., and a director of the Gulf Mining Company and the Sterling Smokeless Coal Company.

Mr. Stover has been a director of the Gulf, Mobile & Ohio for a number of years, and served as executive representative of that road at Washington, D. C., until December 10, 1942, when he was elected vice-president. In May, 1942, he was appointed special assistant to the director of the Division of Railway Transport of the Office of Defense Transportation, and in January, 1943, was made federal manager of the Toledo, Peoria & Western.

Mr. O'Neal was born in Brandywine Springs, Del., and received his early education in the Wilmington, Del., public schools and at Goldey college. He entered railway service in 1894 as a transportation clerk of the Lehigh Valley, and served that railway for 24 years in the capacities of clerk, accountant, statistician, trainmaster, superintendent, general superintendent, marine manager and assistant vice-president. In 1919 and 1920 Mr. O'Neal was furloughed to the United States Railroad Administration and was commissioned as a major in the U. S. Army. In 1921 he was elected vice-president of the Fort Smith & Western, at Fort Smith, Ark., and served in that capacity until 1929, when he was elected vice-president of the Buffalo, Rochester & Pittsburgh, with headquarters at Rochester, N. Y. Mr. O'Neal became president of the Chicago & Eastern Illinois on January 1, 1931, president on the trustee's staff in September, 1933, and president of the re-organized company on July 2, 1940.

Milwaukee Gets First Fairbanks-Morse Diesel Switcher

120-Ton 1,000-hp. switching locomotive, powered with opposed-piston engine, goes in service at Milwaukee

THE first unit of the complete line of Diesel-electric locomotives which Fairbanks, Morse & Co. plans to build in sizes up to 6,000 hp. for all classes of service on American railroads, as announced in the *Railway Age* of May 13, is a 120-ton switcher driven by a 1,000-hp. six-cylinder, two-cycle, opposed-piston Diesel engine, with Westinghouse electrical equipment, including direct-connected generator, truck-mounted driving motors and electrical controls. The locomotive was built for and delivered to the Chicago, Milwaukee, St. Paul & Pacific with christening ceremonies at the Fairbanks-Morse plant, Beloit, Wis., on August 8 and was placed in three-shift switching service at Milwaukee, Wis., where it is being thoroughly tested in all types of terminal switching.

Among the objectives sought in developing this locomotive are high efficiency, low fuel consumption, low maintenance, smooth operation over a wide range, easy accessibility for inspection and repairs and high availability. Referring to the table, it will be noted that the locomotive weighs slightly over 120 tons, loaded ready for service, and develops a starting tractive force of 61,130 lb. at 25 per cent adhesion. It is designed to operate safely at speeds up to 60 m. p. h. and negotiate curves with a minimum radius of 80 ft. In Milwaukee practice, the minimum permissible speeds with this locomotive have been set at 7.5 m. p. h. for one-half hour and 9.1 m. p. h. for one hour and continuous.

Standard Construction from Deck Down

A feature of this locomotive is the fact that from the deck down it represents well-tested construction with no particular innovations in design. The one-piece cast-steel underframe and truck frames are General Steel Castings design, with springs, equalizers, journal boxes, bearings, wheels and axles conforming to current Milwaukee standards. The two four-wheel trucks have 6½-in. by 12-in. journals and are equipped with Edgewater 40-in. heat-treated steel wheels and A. S. F. unit-cylinder clasp brakes. Four driving motors are applied, one on each axle with spring-nose suspension from the truck frame, the wheel and axle assembly being easily removable with each motor. Renewable hardened-steel wear plates and liners are installed on the truck pedestal jaws and also on the plain friction side bearings.

The draft-gear pockets are cast integral with the underframe and Edgewater ring-spring draft gears are installed. The A. S. F. vertical-plane swivel couplers are A. A. R. standard Type E, top-operated.

The locomotive cab and hood are substantially built of steel with sections of the hood over the engine and generator removable. Steel doors on each side and on the front radiator compartment give easy access for inspection and servicing. The cab is thoroughly insulated, equipped with safety glass on all windows, air-operated window wipers, one cushion swivel seat on the right side and a portable, movable, auxiliary box-type seat on the left. The cab is heated when required by a Kysor hot-water heater, and a Vapor 4015 standby heater is installed to maintain the desired minimum temperature of engine cooling water when the locomotive is not in use and subject to freezing temperatures. Suitable louvers supply air for the engine and ventilating purposes and an important feature is the provision of automatic shutters and a variable-speed motor-driven fan for temperature regulation.

The control stand, located at the left of the engineman's position, carries in a single unit, control levers for the Westinghouse Schedule 6 DS straight and automatic air brake, King bell ringer, Brewster sander and the instrument panel. Mounted on this panel are a single lever-type throttle control and reverser, control switch, exciter-field switch, load ammeter, lubricating- and fuel-oil pressure gages, necessary temperature gages, wheel-slip indicator, high water-temperature indicator, air-brake gages, engine shut-down lever and switches for all lights, engine starting, heaters and fuel oil pump, etc. The Pyle-National headlights are equipped with 250-watt lamps.

Electrical Equipment

The Westinghouse, two-stage, three-cylinder air compressor is mechanically driven through flexible coupling connection to the main engine, and includes an intercooler, unloader and air intake filter. The displacement at full engine speed is 246 cu. ft. per min., and 92 cu. ft. per min. at idling speed. Four sand boxes have a total capacity of 28 cu. ft. and sand traps are arranged for sanding both leading wheels in either direction.

General Dimensions and Weight of New Milwaukee 1,000-Hp. Switcher Equipped with Fairbanks-Morse Opposed-Piston Diesel Engine

Width overall, ft.	10
Width of power plant compartment, ft.	6
Height above rail (max.), ft.-in.	14-6
Length (inside knuckles), ft.-in.	48-10
Wheel base, each truck (rigid), ft.	8
Truck center, ft.-in.	25-6
Number of driving wheels	8
Diameter of wheels, in.	40
Size of journals, in.	6½ by 12
Minimum radius of curve, ft.	100
Weight on drivers, ready for service, lb.	244,520
Tractive force, starting, at 25 per cent adhesion, lb.	61,130
Maximum safe speed, m.p.h.	60
Supplies (total capacity):	
Fuel oil, gals.	750
Lubricating oil, gals.	200
Engine cooling water, gals.	100
Sand, cu. ft.	28

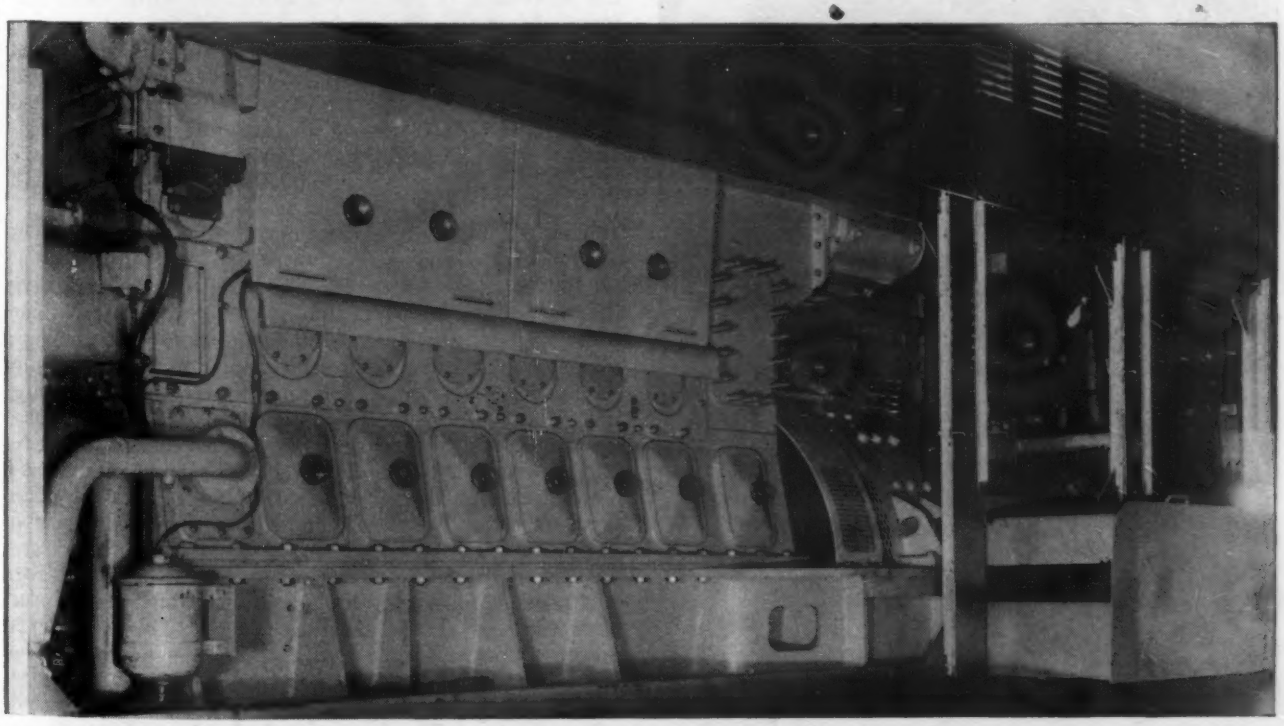
The Westinghouse single-bearing electric traction generator is connected to the engine through a flexible coupling. It is separately excited from an exciter generator unit mounted on the generator and driven by V-belt from the shaft extension. The auxiliary generator part of the exciter-generator unit supplies power for one traction-motor blower motor, controls, lighting and battery charging.

A special generator, supplying current for the motor-driven radiator fan, is driven by V-belts from the shaft extension of the compressor. It is mounted on a bed-plate and carries the rear traction-motor blower runner on its shaft extension.

The front traction-motor blower is motor driven. It is of the series type with power supplied by the auxiliary generator. Motor and blower are built into a single unit.

Four Westinghouse 362-D series-wound axle-hung traction motors with forced ventilation and single reduction gearing are installed in the four-wheel trucks. Class B insulation is used on all generators and motors. Controls are remote electro-pneumatic, 125-volt, single station. The control equipment is arranged to operate two motors in series and two groups in parallel, with full field and the same connections with shunted field.

The No. 1 and No. 3 traction motors and the No. 2



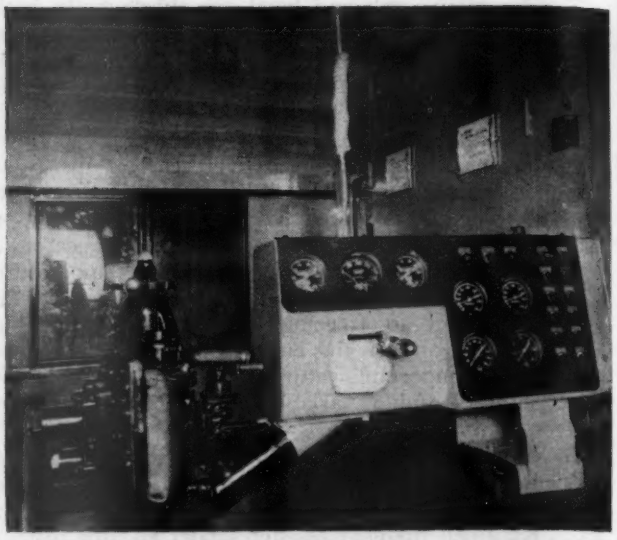
Both Sides of the O-P Diesel Engine and Generator Are Easily Accessible

and No. 4 traction motors are permanently connected in series. A single lever control is used for reversing and throttle. The main engine is equipped with Westinghouse load control to give maximum power output and overload protection under all operating conditions. The engine is started electrically with power from an Exide 56-cell battery through a main generator starting winding. A lever key protects the locomotive when the operator leaves the cab, the engine being stopped and all controls opened when the key is removed.

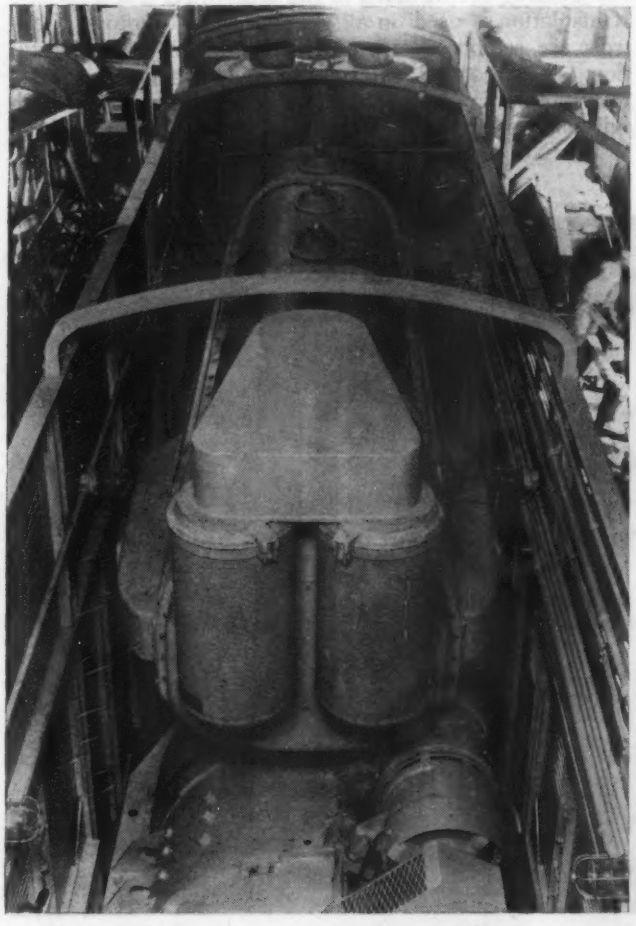
Diesel Engine Equipment

The Fairbanks-Morse O-P (opposed piston) Diesel engine, installed in the new Milwaukee switcher, is essentially the same type as that so extensively and successfully used in naval service during the war and also in six two-car streamline trains, built for the Southern by the St. Louis Car Company, which were described in the *Railway Age* of September 16, 1939. The engine utilizes the two-cycle principle and has a vertical bank of six cylinders with two 8⅛-in. pistons operating on a 10-in. stroke in each cylinder and hence requiring two crank shafts. This engine is designed to develop 1,000 brake horsepower at 800 r. p. m. to the traction generator plus all power required for auxiliaries. The idling speed is 350 r. p. m.

The underlying principle of the O-P Diesel engine is the use of a plain open-end cylinder in which combustion takes place in the center of its length between two pistons which move away from each other, and in doing so uncover the exhaust and air inlet ports, thus eliminating all valves. The pistons controlling the air inlet ports are connected to the upper crankshaft while those controlling the exhaust ports are connected to the lower crankshaft, the two crankshafts being mechanically connected by means of a vertical-shaft with spiral bevel gears and a spring coupling, thereby transmitting power from the upper to the lower shaft and maintaining the proper timing between the upper and lower pistons. In reality, therefore, with a pair of pistons in each cylinder, the six-cylinder engine becomes a 12-cylinder engine. Engines of this type are made in various sizes having from 3 to 10 cylinders and ranging from 150 hp. to 2,000 hp.



Control Panel, Instrument Board and Air Brake Pedestal



Hood Removed to Show the Top of the O-P Engine

Movement of the Pistons

The cycle of operation in the O-P engine begins with the movement of the pistons from their outer dead centers. After the pistons have covered the exhaust and air inlet ports, the air between the pistons is compressed and as they approach inner dead center, fuel is injected into the combustion space where the heat generated during the compression of the air ignites the fuel. Combustion and the resulting expansion, forces the pistons outward on the power stroke, thereby delivering work to the crankshafts.

The burning and expanding of the gases continues until near the end of the power stroke. At this point the lower piston uncovers the exhaust ports allowing the burned gases to escape to the atmosphere. The upper pistons next uncover the inlet ports and air, supplied by the blower, rushes into the cylinder, cleans out the burned gases and at the same time produces a whirling motion in the scavenging air which continues throughout the compression stroke and injection period and contributes to the complete combustion of the fuel. Thus during but one revolution of the crankshaft, compression, injection, combustion, expansion, exhaust and scavenging takes place.

With cylinders 8⅛ in. in diameter and 10 in. stroke, it is possible to develop in excess of 200 hp. per cylinder with the O-P Diesel engine design. This represents power output available to the traction generator. The lower crankshaft leads the upper by 12 deg. to give proper timing of the opening and closing of the inlet and exhaust ports. The lower crank develops about 80 per cent of the total power and the upper crank, which drives

auxiliary equipment, including the blower, develops the remaining 20 per cent.

Main Frame Welded Construction

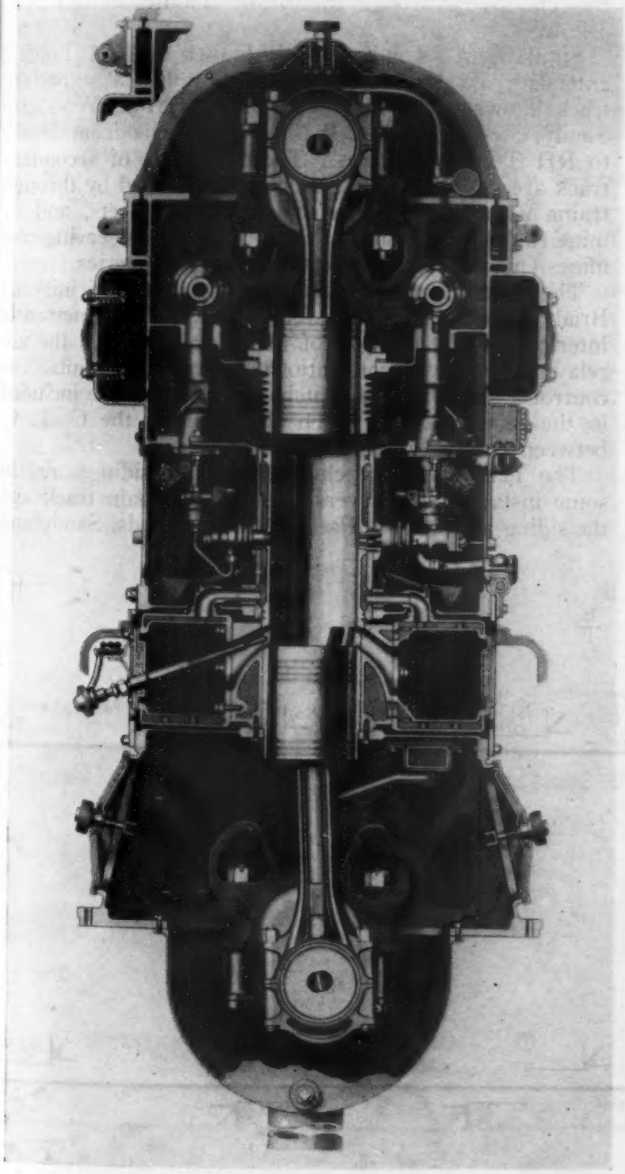
The engine is a complete self-contained unit with attached rotary-type blower, fuel, lubricating-oil and water pumps. The main frame or cylinder block is of welded construction. Both crankshafts are a cast chrome-nickel-molybdenum alloy and the bearing surfaces are ground and polished to give an accurate durable wearing surface. The shafts are supported in the main frame by removable bearings between adjoining cylinders and at each end. Connecting rods are one-piece steel forgings fitted with removable wrist-pin bearings and removable crank-pin bearings. All crankshafts and connecting rods are drilled for passage of the lubricating oil for lubrication of the bearings and piston cooling. A crankcase ventilating system is provided which also prevents oil leaks.

The scavenging air blower is of the multiple spiral lobe, positive-displacement type, driven from the upper crankshaft by means of helical gears and the timing of the impellers is positively maintained by precision gearing. Both exhaust manifolds are water cooled and removable without major disassembling.

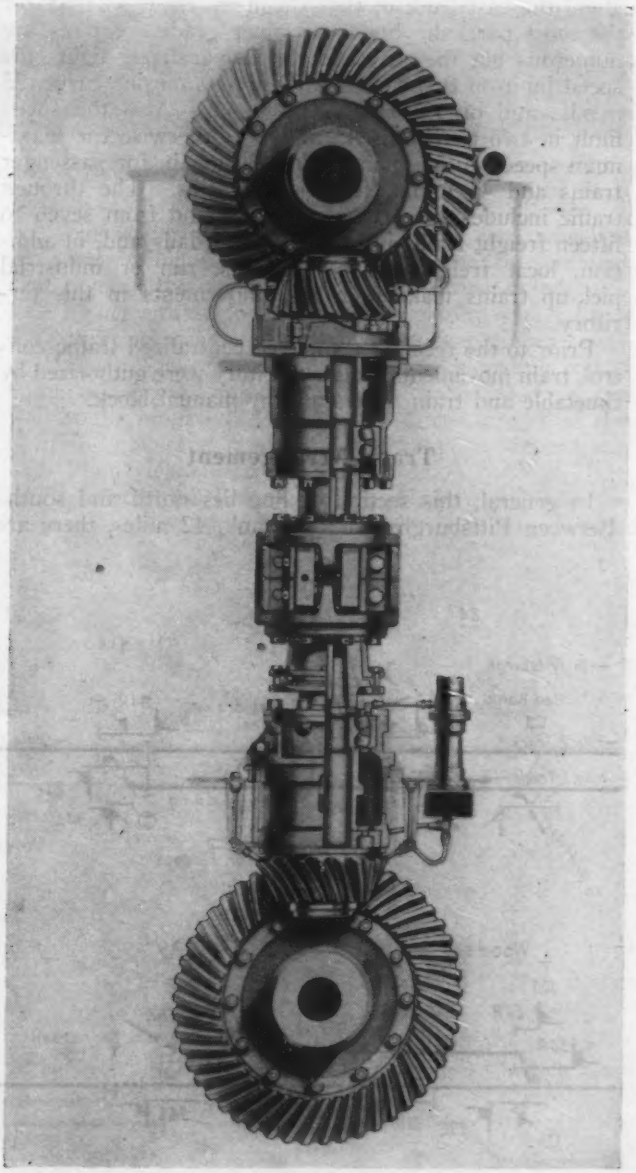
The governor is of the Woodward hydraulic type and controls the quantity of fuel delivered by the injection pumps to the fuel-injection nozzles. Provision is made for adjusting the governor to vary the engine speed to meet the requirements of the specific installation. A built-in overspeed governor automatically shuts down the engine if the speed exceeds a predetermined maximum limit.

A built-in rotary-type fuel-supply pump delivers fuel from the service tank through suitable filters, to individual fuel-injection pumps for the two injection nozzles in each cylinder.

Water for cooling the engine is supplied by a built-in gear-driven centrifugal pump. The built-in lubricating-oil pump is of the herringbone gear type and furnishes lubrication for the entire engine, including main bearings, piston pin bearings, camshaft bearings, etc., thereby eliminating any hand oiling.



Cross-section of the Fairbanks-Morse O-P Diesel Engine



Vertical Drive Connection Between the Upper and Lower Crankshafts

Pennsylvania Installs C. T. C. on 53 Miles of Single Track

Train movements expedited on territory which handles heavy through traffic and locals

THE Pennsylvania has installed centralized traffic control on 52.9 miles of line, most of which is single track, between Brady, at Red Bank, Pa., and RH Tower near Oil City, Pa. This is a portion of the line between Pittsburgh, Pa., and Buffalo, N. Y., via Oil City, Pa., Red Bank being 65.6 miles north of Pittsburgh, and RH Tower 3.5 miles south of Oil City.

In the Red Bank-RH territory, the railroad follows along the east bank of the Allegheny river, so that, for the most part, the line is at river grade. Curves are numerous but the curvature is comparatively light; the speed limit on two curves is 30 m.p.h., on one curve, 35 m.p.h., and on six curves, 45 m.p.h. Also the speed limit in two tunnels is 45 m.p.h. Otherwise the maximum speed on the main track is 50 m.p.h. for passenger trains and 45 m.p.h. for freight trains. The through traffic includes two passenger trains and from seven to fifteen freight trains in each direction daily and, in addition, local freight trains and mine run or industrial pick-up trains make numerous movements in this territory.

Prior to the recently completed centralized traffic control, train movements on this territory were authorized by timetable and train orders and by manual block.

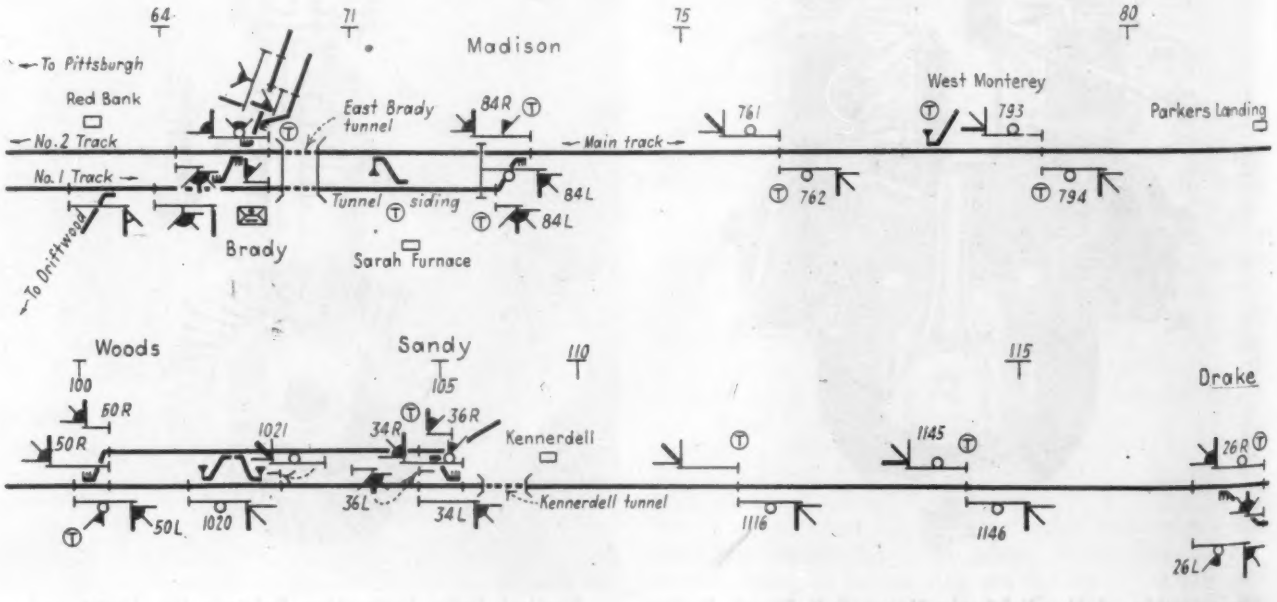
Track Arrangement

In general, this section of line lies north and south. Between Pittsburgh and Red Bank, 42 miles, there are two main tracks. At Brady Tower, MP64, there is a track layout including one crossover and one junction switch which connects with the East Brady Branch, about 4 miles long, extending to a yard and engine terminal at Phillipston, and on to a stub end at East Brady. The crossover serves as the junction between double track from the south to single track north of this crossover. A siding, known as Tunnel Siding, extends from this crossover through the Brady Tunnel to Madison, 3.1 miles.

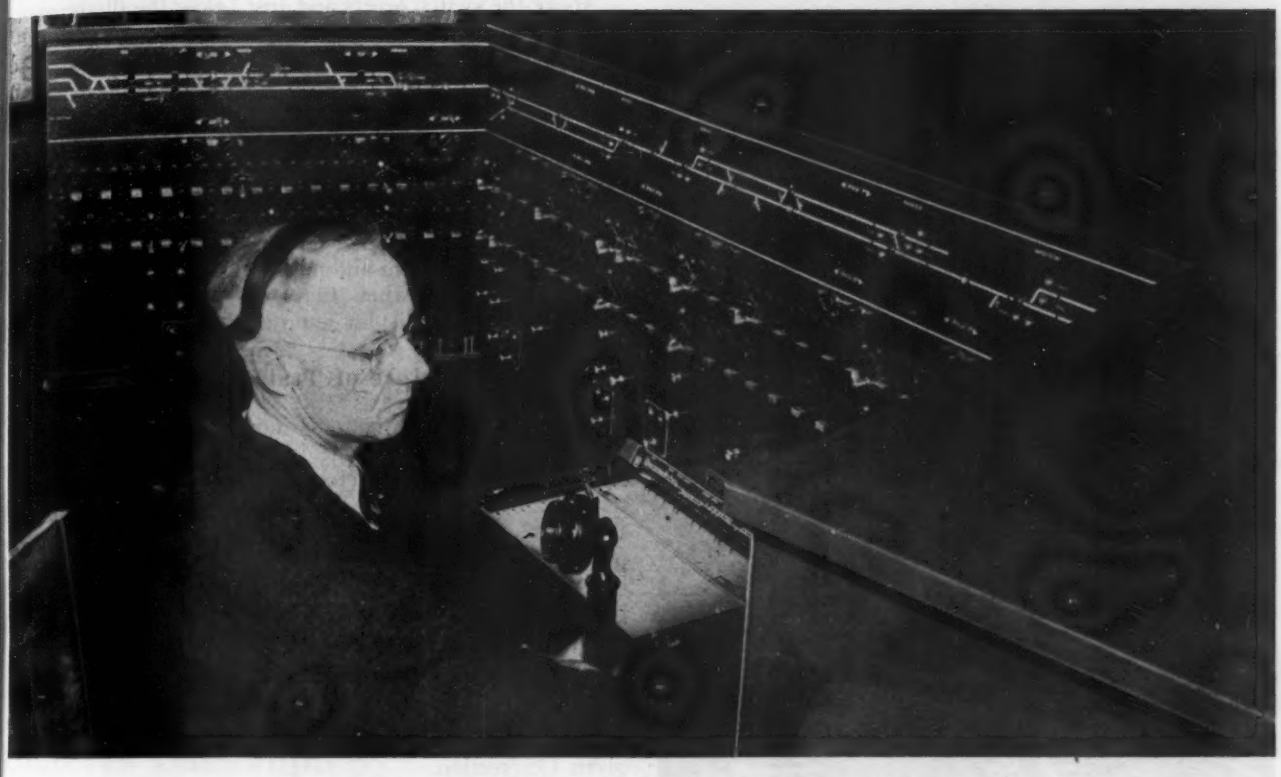
Similarly, a secondary track, known as "101 Track," extends from Parker to Birch, 10 miles, a secondary track known as "102 Track," extends from Woods to Sandy, 5 miles, and "301 Track" extends from Drake to RH Tower, 12 miles. These sections of secondary track are not main track, but are tracks used by through trains when clearing the main line for meets, and by mine run and industrial pick-up trains when serving coal mines, manufacturing plants, and oil refineries.

The switch, crossover and signals in the vicinity of Brady Tower are included in a new electro-pneumatic interlocking, the controls of which are based on the all-relay principle with conventional direct-wire circuits. The control levers for these switches and signals are included in the same machine which also controls the C. T. C. between Brady Tower and RH Tower.

The main-track switches leading to sidings, or, in some instances, crossovers between the main track and the siding at Madison, Parker, Birch, Woods, Sandy and



Track and Signal Plan of the Centralized Traffic

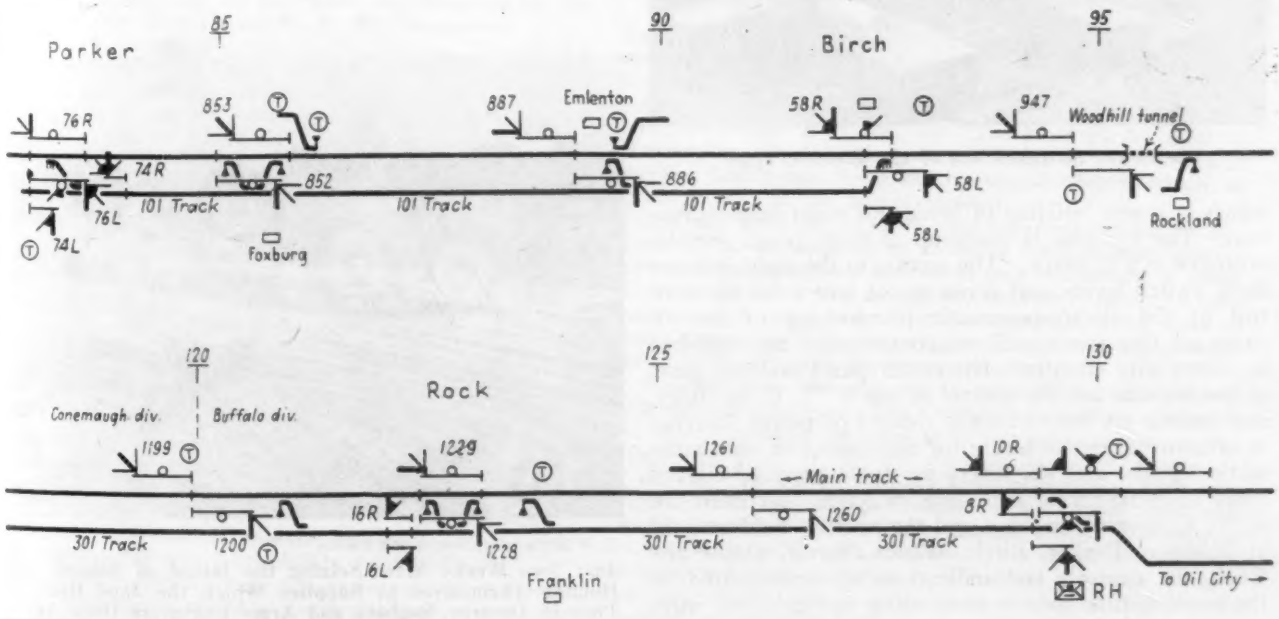


The C. T. C. Machine Is Located in a New Tower at Brady

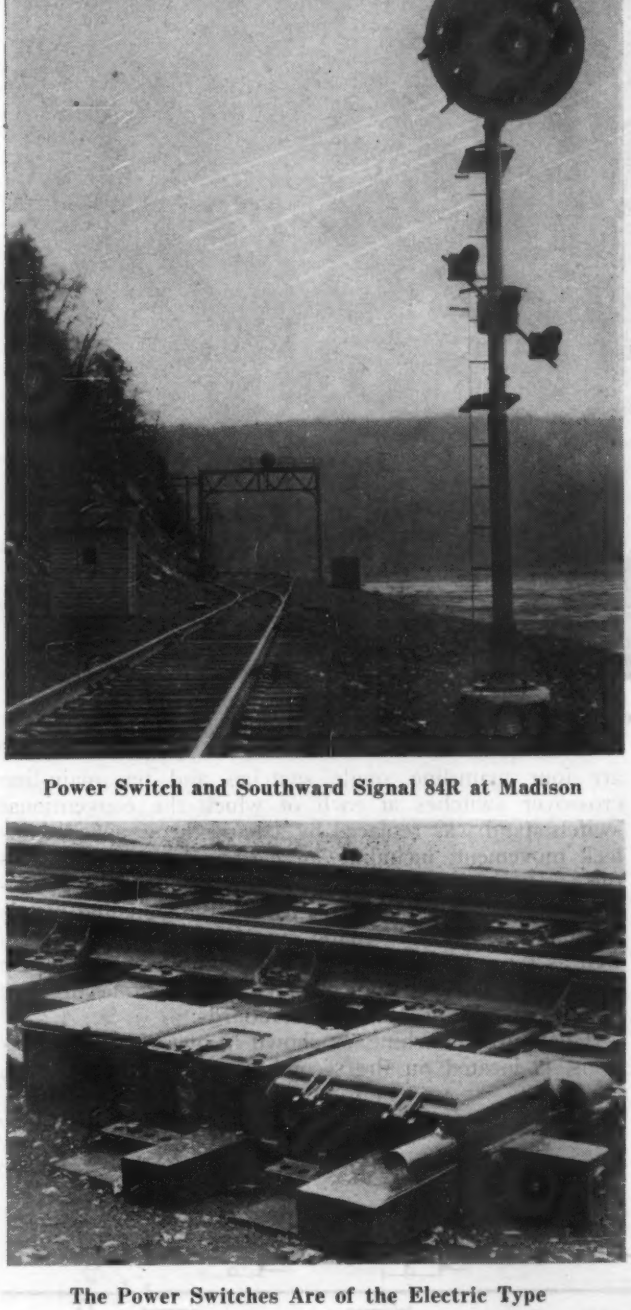
Drake, are equipped with low-voltage electric switch machines, and these machines, as well as the semi-automatic signals at these switches for authorizing train movements, are controlled by the C. T. C. system from the machine in Brady Tower. The switches and signals at RH Tower at the north end of the C. T. C. territory are included in an interlocking at that location; however, the southward signals, No. 10R on the main line and No. 8R on the siding at RH Tower, cannot be cleared unless a release is effected from the C. T. C. control machine at Brady.

At various locations, as shown on the diagram, there are four main-line single switches and ten main-line crossover switches at each of which the conventional switch stand was replaced by a hand-throw switch-and-lock movement, including an electric lock which locks the operating lever in the normal position. These electric locks are controlled as a part of the signaling installation. The semi-automatic signals at the switches, as well as the intermediate automatic signals, are all of the position-light type, and display aspects in accordance with Pennsylvania Railroad standards.

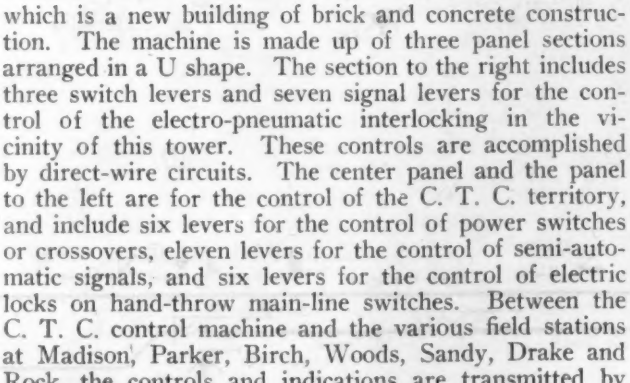
The control machine, as shown in one of the illustrations, is located on the second floor of Brady Tower,



Control Territory Between Brady and RH Tower



Power Switch and Southward Signal 84R at Madison



The Power Switches Are of the Electric Type

which is a new building of brick and concrete construction. The machine is made up of three panel sections arranged in a U shape. The section to the right includes three switch levers and seven signal levers for the control of the electro-pneumatic interlocking in the vicinity of this tower. These controls are accomplished by direct-wire circuits. The center panel and the panel to the left are for the control of the C. T. C. territory, and include six levers for the control of power switches or crossovers, eleven levers for the control of semi-automatic signals, and six levers for the control of electric locks on hand-throw main-line switches. Between the C. T. C. control machine and the various field stations at Madison, Parker, Birch, Woods, Sandy, Drake and Rock, the controls and indications are transmitted by the multiple-time code system, using two new line wires throughout the C. T. C. territory.

Above the switch levers and just below the illuminated track diagram, is a traffic-direction lever for each overall station-to-station section of main track between sidings; also there is such a lever for each section of main line opposite a siding, and there is such a lever for the entire length of each siding between power switches. On the track diagram, one lamp indicates occupancy of each station-to-station block; of each OS switch detector section; of each section of main line opposite a siding, and of each siding. Also on the diagram, the symbols representing the semi-automatic signals include lamps which are lighted when the corresponding signal has been controlled to display a proceed aspect.

Feature of Train Chart

An automatic train chart is mounted in the desk portion of the control machine. This chart has a pen for each of the OS switch detector sections on the C. T. C. territory. A new feature of this train chart is that when the switch involved in the OS section is in the normal position, the pen moves to the *right* and stays there as long as the OS section is occupied, but if the switch is reversed for a train to enter or depart from a siding, then when the OS section is occupied, the pen moves to the *left*. This recorded difference is an aid in checking later to determine which trains took siding, whereas, on previous train chart mechanisms of this type, the pens move to the right only for any train movement over a given OS section.

Coded Track Circuits

Codes at different rates, in the track circuits, control the signals to display the aspects. Track circuit code at the rate of 75 per minute controls a signal to display the Approach aspect, and 180-code the Clear aspect. No code or steady flowing energy in a track circuit causes the most restrictive aspect to be displayed.

The code in the track feeds in the direction opposite the train movement to be made. The direction which the track circuits are to feed in an entire station-to-station block is established by the traffic direction control as a part of the C. T. C. system.

This interlocking and centralized traffic control was planned and installed by the forces of the Pennsylvania.

* * *

U. S. Marine Corps from British Combine

Just Two Weeks After Seizing the Island of Saipan, and Helping Themselves to Supplies Which the Japs Had No Time to Destroy, Seabees and Army Engineers Once Again Had the Saipan Railroad in Operation

Communications . . .

The Longest Shipment?

MONTREAL

TO THE EDITOR:

I was interested in the excellent photograph, on page 318 of your August 19 issue, showing shipment of a cylinder 163 feet 7½ inches long and the heading "The Longest Shipment by Rail?".

Taking in the whole North American Continent, the answer is in the negative. In May last year, you may, perhaps, recall we shipped a cylinder from Montreal to Sarnia, Ontario, which measured 165 feet 4½ inches overall, 10 feet 8 inches outside diameter, and 16 feet 8 inches above the top of rail. You carried a photograph and story on this unusual shipment at the time.

This question with regard to the longest shipment by rail has definitely proved one thing, and that is that *Railway Age* is read very closely by a large number of our officers. Quite a few of them have written me notes or called my office by phone since distribution of your August 19 issue, to call my attention to the fact that our Montreal-Sarnia shipment was longer than that which was depicted in that issue.

Incidentally, I thought the photograph of the Birmingham-Chicago shipment was a particularly swell shot.

B. R. W. DEACON,
Manager, Press Bureau, C. N. R.

Believes Bankruptcy Calls for a New Management

COVINGTON, VA.

TO THE EDITOR:

While discussions are current about unfair competition of other forms of transportation against railroads, may I bring up a point which seems to me to involve elements of unfairness against some companies by their own colleagues in the industry just as unfair (though not of such pressing importance) as government-subsidized competition. I refer to receiverships and subsequent reorganizations where former debts and equities are partially or wholly wiped out. Such a company is subsidized to the extent that it begins new corporate existence with property and equipment at "forced sale" prices, compared to the market prices, or book values, at which such property has to be carried by the wiser, or more fortunate, company. The difference between these two prices represents not only a subsidy to the reorganized company, but also repudiation of debt and the consequent real losses to the Mr. Joneses and Mr. Smiths scattered all over the country.

I am not proposing any solution for the situation. Probably it is just one of those unavoidable situations that has no other practical alternative. But I would like to propose a condition of receivership and reorganization that seems to me to have merits.

That is, I believe the top officers of the management of a company entering receivership should be ineligible to serve as receivers, or officers of the reorganized company. As the paid representatives of the stockholders, they have failed to make a success of the business; therefore, they should suffer as the stockholders, and even the bondholders, have to suffer.

In making this suggestion, it is realized that the application of such a rule would often penalize officers who were conscientiously doing their best for the company; and, also, some who would be excellently qualified to carry on the business. Very often the factors causing failure are beyond their control. But reflection will bring the thought that in any business disruption there are many people thrown out of work through no fault of their own. Just because such a person's job happens to be a high official of the management would seem to be no real reason for sheltering him from misfortune. No man is indispensable to the success of any office.

Perhaps a new head in the business could pick out flaws in management that were overlooked by those displaced.

I think there is some evidence that, in the past, where the managements of companies placed in receivership could expect to continue as receivers at seldom less, and sometimes higher, pay, there has been the lack of the "fear of consequences" in policies. In other words there has tended to develop the same fiscal irresponsibility that is evident in other realms of fiscal jurisdiction.

The suggestion is offered in no spirit of antagonism towards any "reorganization managements", but, rather, in the sense that when the ship goes down the captain goes too if there are any passengers or crew lost—and, here, passengers and crew would be bondholders and stockholders. They are the ones who are being forced to subsidize the new company, by their losses. It should be applicable to any corporate business,—not only to railroads.

Lack of sound fiscal policy by a competing company is unfair competition against the neighbor who maintains his house in sound financial order.

G. B. GRUNWELL

No Greener Pastures

KANSAS CITY, MO.

TO THE EDITOR:

"Junior's" letter in the *Railway Age* of September 2 endeavored to explain why railroads fail to attract college men. His letter deserves commendation. It was clearly written and contained much truth. However, it should be answered by a college man in railroad work who did not, and does not, share similar frustrations.

If young men are rapidly obtaining responsible jobs with airlines, it is largely because the air transportation industry is growing with enormous speed. Recently T.W.A. announced plans to almost double its personnel. Naturally young men filling these positions are enthusiastic over their spectacular starts. While the railroads have attained their full growth, their operation is largely in the hands of older men who in time must be replaced. Herein lies a significant opportunity for youth in the railroad industry. Chances for promotion are limitless and competition is not keen because the supply of young men is small.

With the airlines young men still fill executive positions. These men will not step down for decades. If they should, only a small number of the thousands of young fellows beneath them will be able to take over. Such competition is fierce and disheartening. It might be argued airline salaries are much greater than those paid railroad men. Figures demonstrate that personnel in both rail and air transportation companies receive almost the same level of compensation, and that neither field is the road towards untold wealth.

Does not the distinction between glamorous responsibility and just plain unadorned responsibility bear some significance? A silvery cargo carrier of the air sparkles in the sun, and, as a form of transportation, is as costly as imported champagne. A score of box cars, carrying fifty times as much tonnage, is as common as a glass of beer. But if volume of freight transportation is the goal, box cars and men of unsung responsibility can do the job. The glamour boys are not needed.

What is so magnificent about being an airport manager? Maybe you're in a new clean building with lots of pretty grass around and radios inside. Maybe you're in a big city and not "down the line." But airlines only serve some 200 communities to 10,000 and more served by railroads. It is natural the airport manager will find himself in a large city. The local railroad agent in Kansas City may be located in an old-fashioned, Mid-Victorian building with creaky floors, but his responsibility is equally as great as that of the airport manager.

And how about the railroad's train dispatcher? Through "experience" he has acquired an ability to make decisions quicker and more frequently than any college man ever thought of doing. Upon his shoulders rests enough responsibility to satisfy the most aggressive of young men. There are perhaps twenty times as many dispatchers as there are airport managers, offering twenty times as much opportunity for advancement.

A railroad is an enterprise of great size. Familiarity is obtained only through experience. And a college man must not assume he is, upon graduation, endowed with the capacities for general superintendent.

Finally, it must be recalled that union organizations have done much to stifle aggressive individuals. Union created regulations work a hardship on persons of outstanding ability. Management cannot be blamed for this condition. It is an outgrowth of our political and social economy. It will spread to the air industry as well. Railroading is good enough for me. I look for no greener pastures elsewhere.

ALBERT G. MOORE
Secretary to Executive General Agent, Missouri Pacific Lines

Railroads-in-War News

M.R.S. Ready to Run German Railroads

Soldier railroaders are on the lookout for Nazi tricks, says McIntyre

America's soldier-railroaders of the Military Railway Service are ready to operate German railroads when the time comes, Brigadier General Andrew F. McIntyre, chief of the Rail Division of the Army Transportation Corps, said in September 11 radio interview over the Mutual Broadcasting System. "Military Railway Service troops are keeping pace with the Allied advances in the European theater of operation," General McIntyre declared.

By the end of the year, he said, the Military Railway Service will have about 4,000 American locomotives and 60,000 freight cars operating outside the United States.

He also revealed that the Army Transportation Corps now has a personnel strength of more than 350,000. Four thousand of these are WAC's serving with the Corps in this country, he added, and several hundred more are stationed in the European theater.

Brigadier General Robert H. Wylie, assistant chief of the Army Transportation Corps and its director of operations, said that French patriots are helping American soldier-railroaders to restore rail transportation in liberated areas. "It is the policy of the Military Railway Service to keep French railroadmen on the trains as much as possible," General Wylie continued. "Then will come joint French-American control, and finally, the railroads will be returned to the French."

French and American crews get along well together, General Wylie reported, and this in spite of the fact that most of the American crew members cannot speak French and the French cannot speak English. "But somehow they manage to make themselves understood," the General stated.

As the Germans retreat, General Wylie said, they are placing booby traps and mines in cars and locomotives and all along the track.

"However," he concluded, "this doesn't stop our soldier-railroaders, who have been trained to be on the lookout for such Nazi tricks. They are able to put most of these traps and mines out of commission before they can do any damage."

The two officers were interviewed by Albert R. Beatty, manager of the Publicity Section of the Association of American Railroads, who declared that "our railroads are proud of the job the Army Transportation Corps is doing, and they are glad to be a part of that job."

Barnes Is Named Assistant to Director General, M. R. S.

Lt. Col. Everard F. Barnes, formerly assistant to the president of the Missouri Pacific, has been appointed assistant to the director general of Military Railway Service, and officer in charge of the newly created director general's headquarters at Allied Force headquarters in Italy.

Before going overseas, Colonel Barnes had served the M. R. S. in several capacities, namely: Commanding officer of the 759th Railway Operating Battalion, assistant general manager in M. R. S. headquarters, at St. Paul, Minn., and in the railway branch of the Transportation Section, Services of Supply, in Washington.

In June, 1943, he participated in the Sicilian invasion with the 1st Engineer Special Brigade, subsequently assisting in the organization of the Island Base Section, in which he then served as assistant transportation officer and executive officer of the Transportation Section. Colonel Barnes leaves the latter post to assume his new duties.

Making Tighter Check of Use of Air Travel Priorities

In a statement made public September 12 the War Department served a warning that persons who falsify their reasons for travel or the urgency thereof in order to obtain priority for air transportation are liable under the law to a fine of $10,000, imprisonment of ten years, or both.

"In a few instances," it was explained, air travelers have secured priorities by falsely certifying to the nature, importance or urgency of their trips. With the cooperation of government departments, industry, and the air lines, the War Department is endeavoring to eliminate such abuses of the priority system, the announcement said, and "new procedures for checking the validity of requests" have been put into operation by the Air Transport Command's priorities and traffic division.

A Dining Car Record?

An S. A. L. dining car steward now on leave of absence believes he has a national record in feeding troops in a standard dining car. On a special movement from Atlanta, Ga., to Portsmouth, Va., he served a total of 578 sailors three complete "GI" meals in a single 48-seat dining car, with a crew of four cooks and six waiters. As set up, the movement was to have two dining cars; the companion car was set out at Athens, Ga., because it was in bad order.

Three meals for each sailor means a total of 1734 meals, which, in view of the limited space of a dining car, sounds like a considerable volume of feeding. Can anybody top it?

Army's Railroaders Support the Advance

Move right along with combat troops to keep the attack rolling onward

In the spring of 1944 the headquarters and several of the battalions Second Military Railway Service (now operating railways in France) which were scheduled for the initial landings in Normandy were withdrawn from construction and "depot work" in England. They were dispersed through the southern England training area where they received tactical training and a thorough course in booby traps and mines.

First railway personnel to enter the continent from England was a scouting and reconnaissance party of six officers and four enlisted men which hit the French beaches shortly after D-Day. Making their way up the Cherbourg Peninsula they entered the city of Cherbourg while fighting was still in progress. They went to the railway yards and immediately began an inventory of serviceable rolling stock and damaged track, switches, tunnels and bridges. They catalogued the entire peninsula, including main and branch lines.

Nazis Left Rolling Stock—The Germans left hundreds of freight and passenger cars and many locomotives undamaged. There were booby traps and mines in the rolling stock and along the lines, but the Transportation Corps' railroad soldiers had received a thorough course in dealing with these devices and discovered and rendered them impotent. Many of the passenger cars were modern. The locomotives varied. The majority were recently made French, German, Austrian, Belgian, Italian and British steam locomotives, but about half a dozen were brought to France in 1917 by the American A. E. F. and still carried on their sides the legend "U. S. Army."

Apparently unprepared for the speed of Gen. Bradley's advance up the peninsula, the enemy did not have sufficient time to prepare demolitions. The damage found was mainly the result of Allied artillery and aerial bombardment. All the bridges on the peninsula had been smashed by air bombing, and the tracks had been torn by bombs and artillery shells.

Transportation Corps railway-operating battalions and Engineer Corps construction battalions cooperated to effect rapid repairs to the railroads. The lines were repaired and bridges reconstructed sufficiently to permit the first running of a regularly scheduled passenger train from Cherbourg four times daily.

Often Under Fire—The proximity of

the railway units to the enemy placed them under direct fire by artillery and snipers. One time an advanced part of the reconnaissance party moved forward too fast and found itself between cross fire from the American and German lines. "We got the hell out of there fast," said one member of the party. That wasn't the only instance when military railway men faced fire. In the yards of a liberated city a detachment clearing debris and wrecked cars continued working despite a thirty-five minute artillery barrage directed at them by the Germans.

After General Bradley's forces captured Cherbourg, French civilian railroad men returned to the city to aid in restoring railroad service. They told of German plans—foiled by bombings by the Allied Air Forces—to sabotage engines by running them with full steam up along a track that sloped into the channel waters. The impact of the cold water would cause the steaming engines to explode.

The first passenger train operated by the American Army railroaders was to make its maiden run in secrecy. The French learned about the plan and stood along the track from Cherbourg to the Carentan waving greetings and flinging flowers. On the arrival of the train at Carentan the enthusiastic French decorated the locomotive with garlands.

Were Ready Before Invasion—As the Allies push deeper into France they find the Army Transportation Corps' railroaders right behind them, carrying supplies to the front and evacuating wounded to the rear in hospital trains. Just as soon as territory is captured from the Nazis, Army engineers, assisted sometimes by men of the Military Railway Service, rehabilitate the rails and neutralize mine fields along the right of way. Shoo-flys are quickly built around bomb craters and demolished bridges.

The Second Military Railway Service is equipped with thousands of cars, repaired and tested during the two years of preparation prior to the invasion of France. The component units of the organization received careful training in constructing, erecting and operating locomotives and cars that came to the United Kingdom from the United States in pre-fabricated knocked-down sections.

The immediate job ahead for the Service becomes increasingly more difficult because the rail lines must follow the troops to furnish vital supplies. They can do it. They have been prepared and trained for just this job.

One of the most unusual offices used by an American Army officer is that of Brigadier General Burpee, in command of the Second Military Railway Service. To enable him to reach any bottleneck in the rapidly-moving front he has a rolling office—a converted caboose.

"Reefer" Loadings 11 Per Cent Above 1943 So Far

Calling attention to carloading figures showing an increase of 11 per cent in refrigerator car loadings in the first eight months of this year, as compared to the same 1943 period, Director Johnson of the Office of Defense Transportation on September 12 issued a statement calling attention to the extreme importance of the prompt release and movement of such cars, particularly in the face of the still growing fresh fruit and vegetable traffic. Information reaching the O. D. T., he said, indicates that the demand for refrigerator cars will continue to increase through the fall and winter months. "We can't afford to use these cars for storage," he pointed out.

Weekly loadings of refrigerator cars have been running consistently heavier than in 1943, it was indicated, and during this year's first eight months the weekly average was 31,708 cars loaded, as compared to 28,552 in 1943. The total loaded in the same period this year was 1,078,086, while the total for the first eight months last year was 970,786. The increased demand for refrigerator cars has been general throughout the country, Colonel Johnson said, but at present is most pressing in California and Colorado.

Legion of Merit Awarded 4 Army Railroaders

Three officers and one enlisted man, all former railroaders in civilian life, have won the Legion of Merit medal, according to word received direct from Allied Force Headquarters, in Italy. They are: Lt. Col. Benjamin H. Decker, of Salt Lake City, Utah, once division superintendent on the Denver & Rio Grande Western; Maj. Thomas R. Patterson, of Superior, Wis., former division engineer for the Soo Line; Capt. Virgil I. Kessinger, of Independence, Kan., former roadmaster on the Santa Fe; and T/Sgt. William V. Smith, Clovis, N. Mex., a surveyor in the engineering department of the Santa Fe before entering the army.

Colonel Decker, who is now serving as general superintendent of transportation for Military Railway Service headquarters, has been cited for services in the North African campaign, from February through October, 1943. As ranking transportation officer with the advance echelon of M. R. S. headquarters, he was in charge of staff work covering railway operating matters. In May, 1943, he was attached to the planning section of a task force, to work out details for the Sicilian campaign, and the "highly successful contribution of the M. R. S. in this campaign was largely due to his painstaking and exacting efforts," the citation stated.

Major Patterson, now serving with a Railway Grand Division, received his award for "especially meritorious" work in Italy from October 3, 1943 to July 15, 1944. As assistant engineer of tracks and engineer of tracks and structures during operations in southern Italy, he was in charge of opening tracks and engine facilities in the Naples terminal and port. The report observes that when he came upon the scene, following Allied bombing and enemy demolition, there was not a single track in operation in the entire Naples area. The citation says of him: "His technical and organizational abilities were combined with his boundless energy into a driving power which was able to overcome the greatest of obstacles, and to reconstruct from the wreckage a railroad terminal capable of handling the demands of the port and nearby military installations."

Captain Kessinger, now superintendent of maintenance of way in a railway operating battalion, received his award for outstanding service in Italy. "He demonstrated superior technical skill and organizing ability in supervising construction of the rail line from the Port of Naples to the railhead at Casoria," it was noted of him.

Sergeant Smith, who is now serving in a railway operating battalion, was cited for services in North Africa and Italy, over a 16-months' period from March 1, 1943. Working as railway draftsman during the Tunisian and Italian campaigns, he is credited with having "displayed superior technical skill and ability to work under pressure in difficult circumstances and often in heavily mined areas. He was placed in charge of reconnaissance-survey parties and assisted in planning, restoration and rehabilitation of railroad tracks, bridge and tunnel structures and freight classification yards on the Kasserine-Sousse Line and the Sedjenane-Matour Line in Tunisia, and on the Naples-Cassino-Rome and Naples-Formia-Rome lines in Italy."

More Conventions Called Off

Another list of organizations that have canceled meetings and conventions in cooperation with the campaign of the Office of Defense Transportation to curtail so-called "non-war connected" travel was made public September 11. The total is now 150, according to O. D. T. Director Johnson.

Among others, the latest list includes the annual meetings of the National Petroleum Association, Railway Electric Supply Manufacturers Association, Motor and Equipment Wholesalers Association, National Association of Retail Druggists, and American Trucking Associations.

Promotions from Ranks for 7 Former Railroaders

Out of nine second lieutenants, newly commissioned from the ranks of Military Railway Service battalions, seven were former railroaders, it has been announced by Allied Force Headquarters, in Italy. Eight of the nine new officers received their commissions and new gold bars from Brig. Gen. Carl R. Gray, Jr., in a special ceremony at the Director General's headquarters.

The former railroaders are: DeWayne D. Bell (So. Pac.), Sacramento, Cal.; Melvin W. Birkrem (C. & N. W.), Racine, Wis.; Charles J. Campbell (Southern), Atlanta, Ga.; David W. Chandler (Mo. Pac.), Little Rock, Ark.; John M. Ellis (Santa Fe), Farmington, Ia.; Floyd R. Keefe (C. & N. W.), Oak Park, Ill.; and George W. Nethers (B. & O.), Newark, Ohio.

Simpler Export Permit System

The Office of Defense Transportation has substituted the Association of American Railroads in place of the War Shipping Administration as the authority to which is delegated power to issue O. D. T. unit permits for the shipment of commercial export freight. Permits are no longer re-

quired for carload coal shipments to a port area if not earmarked for export, but must be obtained if such coal is transfered to an ocean vessel for export.

At the same time the O. D. T. relieved rail carriers from making reports formerly prescribed in connection with the export permit system and eliminated the unit permit requirement as concerns truck or water shipments of less than 20,000 lb. or shipments by such carriers to ports for export. These changes were effective September 12.

Materials and Prices

The following is a digest of orders and notices that have been issued by the War Production Board and the Office of Price Administration since August 24, and which are of interest to railways:

Anti-freeze — because manufacturers are now well advanced in making up the nation's winter supply of anti-freezes on the basis of allocations of alcohols made several months ago, there can be no variation later in the percentages of the various grades that will be available to the public. Heavy military and agricultural demands for ammonia, which interfere with the production of methyl alcohol, the basic raw material, have forced a reduction in the amount of methanol-based anti-freezes being produced for use next winter, officials said. As a result, the great bulk of the anti-freezes that will be marketed this year will be based on ethyl and isopropyl alcohols. However, the over-all supply of anti-freeze will be ample for all expected demands, W. P. B. officials said.

Benzene—Civilian allotments of benzene, toluene and xylene have been drastically cut because of increased military aviation requirements for gasoline and TNT. This situation is expected to prevail until April 1945.

Excess Stocks of C. M. P. Materials—Holders of idle and excess stocks of controlled materials are permitted to make special sales to persons who have been authorized to produce civilian goods under the "spot authorization" procedure, by Direction 1 to PR 13. Persons authorized to produce civilian goods under the "spot authorization" procedure will be granted the right to use an allotment symbol, the initial letter of which will be "Z". Persons holding idle and excess stocks of controlled materials will be able to sell them to persons having such an allotment symbol.

The buyer need not charge controlled materials bought under the new rules against any C. M. P. allotment account, officials said. Special W. P. B. permission is not required to make such a sale to a buyer who has been authorized to use a C. M. P. allotment symbol whose initial letter is "Z".

Flat Steel Bars—National emergency specifications for hot-rolled flat carbon steel bars have been eliminated by an amendment to Schedule 15 to L-211.

Fuel Oils—Modification of the minimum viscosity standards for various grades of fuel oils that are manufactured, delivered, or received in the Pacific Coast States has been announced today by the P. A. W. The viscosities of some grades of fuel oil were changed by amending PDO 22. The viscosity of industrial fuel oil for non-military use in Washington, Oregon, and Alaska was lowered to increase the handling and burning efficiency in the cold climates.

Because many fuel oil users in metropolitan Los Angeles have special equipment that can use only domestic fuel oil of lighter viscosity than that specified for the West Coast in general, the amendment contains a special viscosity provision to meet the situation in that city.

Viscosity minima for bunker grade fuel and industrial fuel are as follows: Not less than a viscosity of 140 (previously 150) Saybolt Seconds Furol at 122 deg. Fahrenheit. But bunker grade fuel and industrial fuel of a viscosity of not less than 95 Saybolt Seconds Furol at 122 deg. Fahrenheit may be manufactured and delivered for non-military use in Oregon, Washington, and Alaska.

Lumber—No. 4 or lower grades of Douglas fir, Southern Yellow pine, Western hemlock, Western red cedar, Sitka spruce and No. 3 or lower grades of all species of hardwood may be sold to distributors and consumers on uncertified orders provided that their sale will not interfere with the filling of certified orders. This action was taken by Direction 6 to L-335, because it was found that the lower grades were accumulating in the hands of lumber suppliers. Since lumber users have been limited in the amount of lumber they may purchase, they have been using their authorizations to obtain only the better grades of lumber, leaving the lower grades to accumulate in lumber mills, W. P. B. officials explained.

Direction 6 permits sawmills to place such lumber in transit to fill uncertified orders until September 30, 1944, while lumber distributors may continue to deliver such lumber to their customers on uncertified and unrated orders, beyond September 30, provided the lumber that they sell was placed in transit by their suppliers prior to October 1, 1944. The amount of lumber so received by the distributor for uncertified and unrated sale is in addition to the 5000 to 8000 f. b. m. permitted by Direction 8. Receipt of any of this lumber on uncertified and unrated orders by a Class I consumer need not be charged against the amount of lumber that he has been authorized to receive in the third or fourth quarter, on WPB Form 3640, Lumber Division officials explained. Direction 6 also provides that culls and rejects may be sold on uncertified and unrated orders. However, no lumber may be treated as cull or reject if the supplier charges more than 75 per cent of the price allowed him by the O. P. A. for the lowest standard grade of the same species.

Tool Steel—Supplementary Order M-21-h, governing purchases of tool steel, has been revoked.

Trucks (Used)—Prospective purchasers of used tracks have been urged by the O. D. T. to make certain before acquiring the vehicles that their proposed operation meets all O. D. T. requirements. Since October 25, 1943, the agency said, persons who were not designated motor carriers as of that date have been required to show that the operation of the truck is necessary to the war effort or to the maintenance of civilian economy.

Application for a Certificate of War Necessity must be made and the certificate granted before gasoline allotments are made, O. D. T. pointed out, or, in the case of a new service, application for authority to inaugurate it must be made. These application blanks may be obtained at the applicant's local O. D. T. district office.

Prices

Cement and Cement Products—An increase of ten cents a barrel in manufacturers' and resellers' present ceiling prices for cement produced in the states of Ohio, Michigan, West Virginia, the western portion of Pennsylvania, the western tip of Virginia, and a portion of eastern Kentucky, has been provided by Amendment 7 to MPR 224.

Manufacturers of ready-mixed concrete products located in these areas may add to their established ceiling prices the actual amount of increase resulting to them from the 10-cent-per-barrel increase granted to the manufacturers of cement, according to Amendment 47 to Order A-1, MPR 188.

Douglas Fir—Amendment 10 to RMPR 26 provides several minor changes to clarify and correct provisions of the regulation on Douglas fir and other West Coast lumber. The price of 1 by 12-in. D, flat or mixed grain base is corrected to read $49 per M. b. m. Through error, the price was set at $45, which is $2 less than the price for 1 by 10-in. base.

Shipments of railway and car material in mixed grades are exempted from the requirement to use grade distinguishing symbols, which are required for mixed grades of lumber. This exemption is allowed, the O. P. A. said, because this lumber is purchased solely by buyers who do not resell and who themselves inspect all shipments. Thus, symbol marking of grades by sellers or buyers is an unnecessary expenditure of labor and time.

Forest Products (Western)—The western primary forest products regulation (RMPR 284) has been revoked and its provisions have been transferred to three new regulations for purposes of simplification and better administration. This action, effective September 11, provides separate regulations for each of the three types of forest products involved: (1) MPR 555—Western Poles and Piling, (2) MPR 554—Western Red Cedar Poles and Piling, and (3) MPR 556—Western Railroad Ties and Wooden Mine Materials.

No changes have been made in the price level, but some paragraphs have been reworded in the interests of clarification. All three regulations contain a clause that provides for the completion of existing firm contracts within 60 days from the effective date of an amendment that may reduce maximum prices established in the regulation. This provision is designed to protect sellers who have made long-term commitments to buyers typical of the industry.

The regulation covering western red cedar poles and piling contains two new price tables. One applies to poles longer than 90 ft. and makes uniform and applicable to all sellers the prices previously granted to a few sellers upon individual application. The other provides additions that can be made to base maximum prices to cover processing and treating operations.

Maximum prices have been added to the western poles and piling regulation to cover lengths 123 to 132 ft. inclusive and minimum butt diameters 18, 19 and 20 in. These measurements were not priced in the former regulation. This provision formalizes in the regulation the maximum prices previously granted individual sellers.

The principal change to be found in the western railroad ties and wooden mine materials regulation is the requirement that all tie contractors register with the O. P. A. Lumber Branch in Washington by October 1.

Northeastern Softwoods—A new regulation, MPR-539A, provides specific dollars-and-cents ceiling prices for milling and kiln drying services on Northeastern softwood lumber when performed on a custom basis in the six New England States.

Effective September 2, the regulation retains substantially the same level of prices as that established by the services regulation, MPR-165, which previously covered these services.

For the present, the new regulation's geographic coverage is limited to the New England States, but O. P. A. said that, as further studies are made in other states in the Northeastern and Appalachian areas, this regulation will be amended to cover all areas in which custom milling of Northeastern softwoods is performed.

The regulation establishes identical charges for processing green or dry lumber, based on a weighted average of green and dry charges heretofore prevailing with weights of 25 per cent for dry and 75 per cent for green, a ratio that conforms to recent industry experience. O. P. A. said that while the regulation's prices based on this 25-75 per cent proportion are approximately 50 cents per M. b. m. higher than they would be on a 50-50 basis, this would compensate for several reductions in, and elimination of, some charges that custom mills previously made for certain secondary operation. Furthermore, the 25-75 basis will maintain the mills' dollar-per-M. b. m. revenue on such primary custom milling operations as surfacing, resawing and ripping.

Among the previous changes eliminated by the regulation are the $1 charge for sorting log-run lumber to grade and the $1 additional charge for handling lumber over 14 in. wide. The charge for transferring lumber from car to car without performing any services on it is reduced from $4.25 to $3 for box cars and to $2 for open cars and trucks. The charge of $2 for sorting to width is reduced to $1.50 and the charge of $2.25 for bundling less than 1 in. is reduced to $1.50.

Wastepaper—Amendment 9 to MPR 30, effective September 11, provides that twenty-one industrial grades of wastepaper when packed in machine compressed bales may be sold regardless of the weight of the bale at ceilings heretofore applicable only if each bale weighed at least 500 lb. This action has been taken at the request of the industry, which has shown that it is customary to pack these grades in bales smaller than 500 lb. Accordingly, existing ceilings are maintained, with the bale weight requirement eliminated.

GENERAL NEWS

Anti-Trust Complaint Called Political Suit

Senator Moore says action against the railroads is "fraud on its face"

The anti-trust complaint against the railroads is "a fraud on its face," and Attorney General Biddle instituted it because he wanted to bring "a political lawsuit in the hope of creating hate and prejudice against private enterprise in an effort to corral votes for a continuation of the New Deal," Senator Moore, Republican of Oklahoma, charged in a September 8 Senate speech.

"In my opinion," the Senator said, "this is the first step of the New Deal to consummate public ownership of the railroads. Ocean transportation has already been reduced in practical effect to government ownership. Aviation, inland waterways, and motor carriers are on the list. Already the oil and gasoline pipe lines of the country are being operated under the dictatorship of the Attorney General by the terms of a so-called permanent consent decree.

Economic Rule by Consent Decree—"The files of the Attorney General's office are filled with consent decrees in connection with practically every industry in the country, under which the Attorney General is in effect an economic czar. The suit against the railroads brings the New Deal's number of anti-trust suits now pending to 114, and indicates that the New Deal is moving into the final stages of its program of national socialism."

Previously, Senator Moore had pointed out that rates approved by the Interstate Commerce Commission are the "legal rates" from which the railroads are not permitted to depart. He went on to assert that if rates are improper and discriminatory, "existing laws afford an adequate, and the exclusive, remedy" before the commission. Thus the Senator sees the suit as "a plain attempt of the Attorney General to invade the administrative functions delegated to the commission by Congress."

He also criticized those Western speeches by the Attorney General and Assistant Attorney General Berge which provided the advance billing for the filing of the complaint. Mr. Biddle, he said, "made a campaign tour of the west coast" last month, telling the people of that section "that they were hampered by discriminatory freight rates." The commencement of the suit, in the Senator's opinion, made such talk "highly prejudicial and improper," and explainable only as "a bid for New Deal votes." And because "a year or more" will intervene before the suit can be tried, the defendants "will have no opportunity to refute the charges until after election."

Well Organized Drive—All of which convinces Senator Moore that the campaign of preparing the public for the suit was "well organized." With respect to the Berge charge that the railroads delayed the introduction of new equipment and retarded the development of other carriers, the Senator had this to say:

"As a matter of fact, the nation is indebted for the outstanding services rendered by the railroads during the recent war years. No industry has done a more magnificent job under more crushing handicaps than the railroads. They have depleted their equipment almost to the exhaustion point, while at the same time paying a rate of tax that does not permit the accumulation of a surplus to replace their worn-out equipment. . . . The transportation arteries of the country are the sinews that bind our economy into a coordinated activity. The New Deal economists realize this important fact, and the attack on this important segment of our industry at the very first whisper of victory presages what is in store for all private enterprise."

"Quiz Program" Used for Employee Education

The Burlington's relief, hospital, medical and pension departments have been holding "quiz programs" within the organization as a means of widening understanding, not only of the departments' functions but of the operations of the railroad as a whole, among both employees and supervisory staff. Two of these "quiz" sessions have been held so far—resulting in two helpful suggestions for the increase of educational facilities within the departments, one of special interest to newer employees and another for the instruction of supervisory personnel, enabling the latter to handle cases which, otherwise, might have to wait attention by a department head.

In a circular to the staff of these departments it is stated that "we expect to have additional quizzes from time to time, and on these occasions different 'experts' will be selected from each section." Employees are invited to submit questions with which to "stump the experts," even if they themselves cannot answer them.

I.C.C. Staff Appointment

Luther B. Jackson, assistant chief of the Section of Dockets, Interstate Commerce Commission, has been appointed chief of the section, succeeding Frank C. Stratton who retired on July 1. Charles F. Swetnam succeeds Mr. Jackson as assistant chief.

Carriers Upheld in Automotive Attack

Transport Assn. asserts auto makers misrepresent "integration" plan

About a month ago, the Automobile Manufacturers Association issued a statement calling for a continuation of "the present effective competitive system of transportation" and opposing the so-called "integration program" of the Transportation Association of America.

Deny to Others Privileges They Enjoy—The Transportation Association last week characterized the Automobile Manufacturers' statement as "amazing" and "almost incredible"—asserting that the latter has failed to represent the "integration" program accurately. The Transportation Association says that the Automotive people are opposing, for common carriers, a principle of common ownership which the manufacturers themselves enjoy. They do not make vehicles just for highway transportation—but also airplanes, Diesel locomotives, and Diesel engines for ships. As *private* carriers they operate "water, rail, highway and air transport facilities." The average shipper, however, cannot afford to supply his own transportation tools as do these "Goliaths of American industry"; the average shipper has to depend on *common* carriers—and the manufacturers are seeking to "deny to this average shipper the benefits to be derived from the co-ordinated use of facilities."

As to the Automobile Manufacturers' contention regarding the "effectiveness" of the present competition between types of transportation, the Transportation Association makes several observations, the following among them:

1. In May of this year the truckers appeared before the Interstate Commerce Commission and advocated an increase in *rail* rates on less-than-carload freight. They contended that trucks could not hold their volume against rail competition. They proposed that the *public* pay an increase in *rail* rates to sustain the uneconomic dislocation in *their own industry*. This, the Manufacturers call "seasoned" competition.

2. Present law has been interpreted to prohibit surface-carrier ownership of air services. *These Manufacturers endorse such a policy.* They say it is in the public interest. They would continue the practice of using taxes paid by surface carriers, and other taxpayers who are remote from all benefits of the expenditures, to construct tax-free airports, to maintain air-lane services by the government costing upward of 25 million dollars annually. *Yet, they would*

deny the right of surface carriers to participate in rendering such services.

3. They endorse the prohibitions of the Panama Canal Act. The great body of shippers and consumers, not located on or adjacent to water, cannot share in the benefits of this form of transportation. Yet, in effect, the Manufacturers ask these transport users to make up in the level of their freight costs for the revenue losses sustained by land carriers through diversion of tonnage.

4. They endorse the underlying fallacy of present national policy, to wit: that, but for very few exceptions, government expenditures on the public domain (*which need earn no return*) continue to compete with private capital in railroad roadbeds (*which must earn a return*).

How About Govt. as an Auto Builder—"How would these same Manufacturers react," the Transportation Association asks, "if, after the war, the government concluded to lease, to their competitors, surplus ground and plant facilities for the production of automotive equipment, the rentals therefrom to yield the same rate of return upon investment as airlines pay for the use of airports, and all property taxes to be waived?"

The Association also calls attention to the timing of the Manufacturers' statement—to coincide with "Attorney General Biddle's vicious attack against the railroad industry in his Spokane speech." The Manufacturers' views, it is asserted, will be accepted by the American people as agreeing with the efforts of the Department of Justice "to disintegrate the system of private enterprise in common-carrier transportation."

The Transportation Association asks if the Manufacturers believe the private investor will continue to support the common-carrier industry under conditions which have obtained in this industry. If the private investor fails to do so, the government will have to step in, and the Transportation Association asks if that is what the Automobile Manufacturers want.

Is Present Set-up Satisfactory?—The Manufacturers asserted in their statement that the present "system of competition" is "virtually free from public complaint"—and the Transportation Association wants to know if that assertion is subscribed to by the traffic executives of the automotive industry. It asks also if these traffic men would contend that "competition in rates" in a regulated industry results in a generally lower rate level for the majority of shippers and consumers.

The automotive industry, through another of its organizations also—the so-called "Automotive Council for War Production"—is become increasingly active in propagandizing against the railroads and in favor of the magnification of socialized ownership of transportation. This "Council" has recently widely distributed a speech by Robert F. Black, president of the White Motor Company, in which he argues against the bogey of "integration," plumps for the elimination of the mythical interstate truck "barriers," the lifting of the limitations on truck sizes and weights, and the provision of inter-regional super-highways, with "other beneficiaries" than the users sharing the cost.

Study of Lettuce Transport by Air Carrier

The latest issue of the Department of Agriculture's "Marketing and Transportation Situation" publishes a summary of a report on the possibilities of transporting perishable commodities by air, which was jointly prepared by the Department's Bureau of Agricultural Economics and the Edward S. Evans Transportation Research. The transportation of lettuce from California to Detroit, Mich., was made the basis of the survey which finds that, with various conditions placed, perishables could be moved by air at rates consistent with prices at which they could be marketed.

More specifically, it is concluded that lettuce from the Salinas Valley of California could be flown to the Detroit market at a cost of 6.55 cents per ton-mile—the equivalent of 3¾ cents per pound above the cost of bringing in the lettuce by rail. And tests indicate that the air-borne lettuce can be marketed in Detroit at a differential of five cents a head over rail-borne lettuce.

The 6.55 cents per ton-mile figure, however, contemplates a flexible contract-carrier operation which could obtain capacity loads and operate the year round by shifting among the various growing areas. Also, it is assumed that the aircraft used to transport the lettuce to Eastern markets would obtain return loads, carrying for 9.08 cents per ton-mile manufactured goods to San Francisco, Calif., as a point for west-coast distribution or for export. The cost figures are further based on the use of Douglas C-54A cargo planes with an operating cost of 58.25 cents per plane mile.

Remodeled "Lake Winnipeg" Displayed by C. P. R.

A compartment-buffet-lounge car, the "Lake Winnipeg," fresh from a complete overhaul at Angus shops, recently was inspected in Windsor station, Montreal, by W. M. Neal, vice-president of the Canadian Pacific and members of the railroad's post-war equipment committee, which directed the job. Mr. Neal at that time announced the treatment given the "Winnipeg" will be followed on four other "Lake" cars, and on other equipment now in service, "as the next best thing to the new cars which must wait on peace and an easier steel supply."

Side wells of the rebuilt car are of bleached mahogany, with the upper wall

Photo courtesy C. P. R.

The Buffet Lounge End of the Remodeled "Lake Winnipeg" Has Lounge Accommodations for 11 and Will Seat 10 at Dinner

and ceiling in the main room of soft green and ivory. Furniture is of bleached wood, as well, and upholstery is of light green and fawn. Electric lamps, concealed above the windows, provide direct illumination on the tables and chairs below and indirect lighting from the ceiling.

The four compartments and the drawingroom all are equipped with outlets for electric razors, high-frequency buzzers for wake-up calls and two-tone chimes to summon the porter.

Freight Car Loadings

Carloading figures for the week ended September 9 had not been announced by the Association of American Railroads when this issue went to press.

Loadings of revenue freight for the week ended September 2 totaled 898,450 cars, and the summary for that week, as compiled by the Car Service Division, A. A. R., follows:

Revenue Freight Car Loading

For the Week Ended, Saturday, September 2			
District	1944	1943	1942
Eastern	167,415	172,181	164,744
Allegheny	199,268	195,766	189,095
Pocahontas	56,060	56,135	56,333
Southern	120,894	120,193	121,387
Northwestern ..	143,631	151,364	148,866
Central Western	138,484	131,519	134,301
Southwestern ..	72,698	73,917	73,234
Total Western Districts	354,813	356,800	356,401
Total All Roads	898,450	901,075	887,960
Commodities			
Grain and grain products	47,862	54,277	44,084
Live stock	16,840	17,596	16,143
Coal	174,883	177,212	166,100
Coke	13,851	14,713	14,275
Forest products.	47,427	47,442	52,442
Ore	76,219	89,342	85,862
Merchandise l.c.l.	109,420	101,889	88,997
Miscellaneous ..	411,948	398,604	420,057
September 2 ..	898,450	901,075	887,960
August 26	905,724	904,057	899,405
August 19	887,446	891,340	869,434
August 12	896,172	887,164	868,845
August 5	890,458	872,133	850,221
Cumulative Total, 36 Weeks ..	29,890,956	28,863,647	29,624,401

In Canada—Carloadings for the week ended September 2 totaled 73,136, the highest reached this year, as compared with 72,595 for the previous week, and 69,796 cars for the corresponding period last year, according to the compilation of the Dominion Bureau of Statistics.

Total for Canada	Total Cars Loaded	Total Cars Rec'd from Connections
Sept. 2, 1944	73,136	37,713
Aug. 26, 1944 ..	72,595	37,219
Aug. 19, 1944 ..	69,513	37,032
Sept. 4, 1943 ...	69,796	41,772
Cumulative Totals for Canada		
Sept. 2, 1944 ...	2,429,736	1,347,017
Sept. 4, 1943 ...	2,270,026	1,399,325
Sept. 5, 1942 ..	2,242,341	1,176,528

War Department Claims Wharfage at New Orleans

The War Department has filed a complaint with the Interstate Commerce Commission against railroads participating in freight rates to or from New Orleans, La., on export, import, intercoastal and coastwise traffic, asserting that such rates are unreasonable and in violation of section 1 of the Interstate Commerce Act to the extent that they make no allowance for wharfage expense on shipments handled on piers operated by the War Department.

The complaint contends that the Board of Commissioners of the Port of New Orleans collects a wharfage toll charge of fifteen cents per ton on most commodities, except liquid or bulk cargo, handled at piers operated by it, and that this wharfage charge is absorbed by the railroads. Failure to allow the department an equivalent amount on property handled at piers operated by the War Department on the same shipside rates constitutes discrimination, it is argued. The commission is asked to order reparations and to require the roads to make a suitable allowance on such traffic. The case is docketed as No. 29185.

Seek Permanent Cancellation of Ex Parte 148 Increases

A petition to the Interstate Commerce Commission for issuance of a citation requiring the railroads to show cause why the freight rate increases authorized in Ex Parte 148 and subsequently suspended should not be permanently canceled has been filed by John E. Benton and other counsel for a group of state regulatory authorities.

The petition was filed in the name of the National Association of Railroad and Utilities Commissioners, the Southeastern Association of Railroad and Utilities Commissioners, the state commissions of Alabama, Connecticut, Florida, Georgia, Idaho, Illinois, Louisiana, Minnesota, Montana, New Mexico, North Carolina, Oklahoma, South Dakota, Tennessee, Texas, Utah and Washington, and the states of North Dakota and Iowa. Only through some such action, it was indicated, can those interested in securing permanent cancellation of the increases get that question before the commission.

Odiorne Put in Charge of W. P. B. Car and Engine Sections

In a move to reorganize the Transportation Equipment Division of the War Production Board, the motive power and rolling stock sections of the division have been consolidated in one unit, which will be under the supervision of D. W. Odiorne, former chief of the rolling stock section. The deputy chief in charge of locomotives is M. K. Tate, while the deputy chief in charge of rolling stock is James Driscoll. Procedures and personnel of the sections will not be affected, it is understood.

Time to Look Ahead, Colonel Henry Tells Shippers

The time has come now to begin to look ahead to the next job of transportation—to meet the needs of peacetime commerce with service as good, as efficient, and as economical as it can be made. This thought was conveyed to the Trans-Missouri-Kansas Shippers Advisory Board meeting in St. Louis, Mo., on September 14 by Col. Robert S. Henry, assistant to the president of the Association of American Railroads.

While the wartime job of the railroads and shippers is not over yet, the plans are laid down, and the methods are established, tried and tested for meeting the demands of that job, the speaker indicated. What the railroads have accomplished in the past five years—in co-operation with the shippers—has been done "not because of some new and brilliant improvisation brought forth under stress of war, but because of the inherent soundness of the rail method of hauling persons and goods in trains of cars on tracks, and because of the successful operation of plans laid and preparations made years ago."

In this war, Colonel Henry continued, the railroads are carrying about double the load they carried in the last war, and without the congestion and the higher freight rates that prevailed then. Whereas in World War I the operation of the railroads cost the federal treasury two million dollars a day, in this war, under private operation, they not only are not a burden on the taxpayers, but are paying five million dollars a day in federal, state and local taxes. Such accomplishments, he said, are the results of three great underlying facts: "Ingenuity in technological progress, investment in improved plant and equipment, co-operation all along the line in getting greater use out of this better plant."

Concluding, the speaker prophesied: "Ahead there are still greater possibilities—possibilities in technological improvements, made fruitful by the money of courageous and far-seeing investors, and by the organized and effective co-operation of railroad with railroad and of the whole railroad industry with its customers—such things as only freedom of enterprise and effort will permit and make possible."

Claim Service Order Violations

Judgments have been obtained in the federal court at Chicago, Ill., according to advice made public by Secretary W. P. Bartel of the Interstate Commerce Commission, against the Atchison, Topeka & Santa Fe; Chicago, Burlington & Quincy; and Chicago, Milwaukee, St. Paul & Pacific; each in the sum of $1,000, on bills of complaint filed at the request of the commission. Each road was charged with having transported five carload shipments of empty beer containers in type-RS refrigerator cars, though such operations were prohibited by Service Order No. 178.

August Export Freight

Despite the heavy movement of export freight which the railroads have been transporting for months, the ports of this country are completely liquid, according to the Association of American Railroads. Less than 25,000 cars of export freight were at the ports on September 1, this year. With an average daily unloading of more than 5,000 cars, this means that the bank of freight on hand in cars at the ports was only 4.8 days' supply. Only 8 per cent of the cars on hand had been at the ports more than 10 days. There were only 35 cars at all ports which had been on hand over 30 days.

Cars of export freight, excluding coal and grain, handled through United States ports in August totaled 156,902, compared with 135,622 cars in August 1943, or an increase of 16 per cent. Export grain unloaded at the ports totaled 2,446 cars, compared with 3,510 in August 1943, or a decrease of 30 per cent.

The railroads handled 387 carloads of

SELECTED INCOME AND BALANCE-SHEET ITEMS OF CLASS I STEAM RAILWAYS

Compiled from 131 reports (Form IBS) representing 135 steam railways
(Switching and Terminal Companies Not Included)

All Class I Railways

Income Items	For the month of June 1944	For the month of June 1943	For the six months of 1944	For the six months of 1943
1. Net railway operating income	$99,821,701	$108,963,018	$551,404,143	$712,176,146
2. Other income	18,802,129	17,401,481	88,754,728	81,581,330
3. Total income	118,623,830	126,364,499	640,158,871	793,757,476
4. Miscellaneous deductions from income	6,019,947	2,539,737	21,455,823	14,446,560
5. Income available for fixed charges	112,603,883	123,824,762	618,703,048	779,310,916
6. Fixed charges:				
6-01. Rent for leased roads and equipment	13,198,734	15,100,104	76,683,313	88,824,658
6-02. Interest deductions[1]	35,209,600	35,709,566	202,159,013	216,926,846
6-03. Other deductions	119,293	120,205	782,914	745,452
6-04. Total fixed charges	48,527,627	50,929,875	279,625,240	306,496,956
7. Income after fixed charges	64,076,256	72,894,887	339,077,808	472,813,960
8. Contingent charges	2,739,204	2,348,961	16,544,408	14,248,678
9. Net income	61,337,052	70,545,926	322,533,400	458,565,282
10. Depreciation (Way and structures and Equipment)	26,853,929	26,411,241	159,441,874	158,437,074
11. Amortization of defense projects	15,236,918	11,273,601	89,004,657	62,944,165
12. Federal income taxes	121,450,602	125,237,447	646,399,458	663,491,235
13. Dividend appropriations:				
13-01. On common stock	7,083,759	6,729,364	71,439,125	66,404,381
13-02. On preferred stock	1,705,517	1,152,943	14,987,915	14,599,629
Ratio of income to fixed charges (Item 5 ÷ 6-04)	2.32	2.43	2.21	2.54

All Class I Railways

Selected Asset and Liability Items	Balance at end of June 1944	Balance at end of June 1943
20. Investments in stocks, bonds, etc., other than those of affiliated companies (Total, Account 707)	$591,309,529	$562,367,008
21. Cash	944,276,979	1,054,618,282
22. Temporary cash investments	1,833,864,183	1,250,535,348
23. Special deposits	163,179,057	203,265,314
24. Loans and bills receivable	185,698	273,975
25. Traffic and car-service balances—Dr.	45,609,832	37,063,524
26. Net balance receivable from agents and conductors	146,158,712	167,299,374
27. Miscellaneous accounts receivable	649,105,558	570,798,603
28. Materials and supplies	588,622,371	516,510,997
29. Interest and dividends receivable	25,825,812	20,105,232
30. Rents receivable	1,560,122	1,180,952
31. Other current assets	60,526,556	47,512,967
32. Total current assets (items 21 to 31)	4,458,914,880	3,869,164,568
40. Funded debt maturing within 6 months[2]	203,509,004	157,737,409
41. Loans and bills payable[3]	6,138,386	15,113,928
42. Traffic and car-service balances—Cr.	210,323,681	148,842,338
43. Audited accounts and wages payable	428,164,238	360,331,140
44. Miscellaneous accounts payable	130,114,377	113,398,419
45. Interest matured unpaid	70,908,170	69,149,518
46. Dividends matured unpaid	25,203,892	27,209,248
47. Unmatured interest accrued	59,079,736	52,075,532
48. Unmatured dividends declared	13,624,848	12,916,027
49. Unmatured rents accrued	17,036,588	17,531,133
50. Accrued tax liability	1,742,002,636	1,356,875,482
51. Other current liabilities	96,669,180	95,018,830
52. Total current liabilities (items 41 to 51)	2,799,265,732	2,268,461,595
53. Analysis of accrued tax liability:		
53-01. U. S. Government taxes	1,595,783,480	1,220,251,034
53-02. Other than U. S. Government taxes	146,219,156	136,624,448

[1] Represents accruals, including the amount in default.
[2] Includes payments of principal of long-term debt (other than long-term debt in default) which will become due within six months after close of month of report.
[3] Includes obligations which mature not more than 2 years after date of issue.

Compiled by the Bureau of Transport Economics and Statistics, Interstate Commerce Commission. Subject to revision.

Atherton between Clinton and Terre Haute. It was assumed that because of fog the crew of the Dixie Flyer missed the meeting point and ran into the mail train. At the time of going to press it had not been determined whether the mail train was standing still or was in motion.

Colonel Peterson Returns to Railroad Job

The return of Lt. Col. Edwin W. Peterson to railroad service, after 3½ years in the United States Army, was announced by the Bangor & Aroostook, September 1, when he again took up duties as general storekeeper at Derby, Me. Overseas since February, 1944, Colonel Peterson recently was returned to this country on special duty, and upon application for return to inactive service, lately was relieved at Fort Dix, N. J.

Colonel Peterson, on March 15, 1941, was called to active duty at Washington, D. C., in the Railway Section, Office of Chief of Engineers, for the purpose of planning and training of military railway units on the Army's Claiborne-Polk Military Railroad, at Camp Claiborne, La. On November 16, 1942, when all military railway organizations were transferred from the Corps of Engineers to the Transportation Corps, with headquarters in the Pentagon building, Washington, Colonel Peterson became contracting officer for the Army in connection with the use of railway facilities on many of the large railroads to train M. R. S. units then being called to fill overseas needs.

On December 27, 1943, he was transferred from Washington to New Orleans, La., with the Second M. R. S., as general storekeeper. He went overseas with that unit in February of this year. Later he was transferred to the Military Railway Division, Office of Chief of Transportation, and assigned to duty in London.

Ask Close Check on Tieing and Bundling Scrap Paper

Because there have been numerous instances of serious loss of car-days on cars received under load with scrap paper, when shipped loose or in small bundles, due to failure of shippers to comply fully with the classification requirements as to bundling and tieing scrap paper, and because the Car Service Division of the Association of American Railroads has on several occasions had to place embargoes to prevent further delay to such cars at unloading points, railroads have been asked by Car Service Division Chairman Kendall to enlist the close attention of their local staffs to insure the proper preparation of scrap paper for shipment.

Representation of Employees

The Utility Workers' Organization Committee, Congress of Industrial Organization, has supplanted the American Federation of Labor's Brotherhood of Railway Carmen of America as the Railway Labor Act representative of carmen, their helpers, and apprentices employed by the Pittsburg & Shawmut, according to results of a recent election which has been certified by the National Mediation Board.

In another recent election on the Spokane-International the Carmen and other unions operating through the A. F. of L.'s Railway Employees Department have won the right to represent the previously unrepresented machinists, boilermakers, blacksmiths, carmen, the helpers and apprentices of the foregoing, and roundhouse employees and railway shop laborers.

Expect Easier Manpower Control

A statement by a nine-man Management Labor Policy Committee on voluntary means of solving manpower problems, particularly in the period preceding the end of the war with Germany, when maximum production is still required, has been made public, with complimentary comment, by War Manpower Commission Chairman Paul V. McNutt. One of the three "labor" members of the committee is H. W. Fraser, president of the Order of Railway Conductors.

Pointing out that the committee is aware that "certain apprehensions have arisen in labor, agriculture, and management over references to sanctions and enforcement in the August 4, 1944, directive of the Office of War Mobilization," the statement explained that the committee had been informed that "the inclusion of sanctions is intended only to insure that the voluntary and co-operative efforts of the vast majority will not be dissipated by the few who refuse to co-operate." Nevertheless, to remove such apprehensions, the committee recommended that restrictions and programs applying to manpower utilization be removed as early as possible in as many areas as possible, and that the federal man-

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new TYPE "E" BOOSTER*

*Trade Mark Reg. U. S. Pat. Off.

combines { **MAXIMUM POWER WITH SMOOTH OPERATION**

In the development of the new Type "E" Booster, the trend in locomotive design toward higher boiler pressures, as well as many new factors in steam locomotive operation, have been kept in view.

A special starting feature and the application of proper gear ratios for given boiler pressures, wheel diameters and adhesive weight, provide maximum starting effort. The short cut-off takes full advantage of the expansive properties of the steam and effects marked economies in steam consumption. Then such features as dynamic balancing and the roller bearing crank shaft, securely housed in the engine bed, greatly increase the smoothness of operation.

In every element the Booster is designed to give the most effective service, with a minimum of maintenance.

FRANKLIN RAILWAY SUPPLY COMPANY, INC.
NEW YORK • CHICAGO
In Canada: FRANKLIN RAILWAY SUPPLY COMPANY, LIMITED, MONTREAL

power organization outline its plans to simplify the controls it has set up.

Commenting, Mr. McNutt said, "With the end of the war with Germany this agency will be in a position to meet the manpower requirements of war industry without the controls which have been in effect in recent months." Such a prediction was based, he indicated, on the evidence in the committee statement that "labor" and "management" would exert every possible effort to "meet the needs of the situation through voluntary co-operative efforts."

Trucker Would Force Roads to Carry His Trailers

Ringsby Truck Lines, Inc., of Denver, Colo., has filed with the Interstate Commerce Commission a complaint wherein it seeks a commission order "commanding" the Atchison, Topeka & Santa Fe, the Chicago, Burlington & Quincy, and the Union Pacific to establish "reasonable facilities" and "just and reasonable" rates, rules and regulations for the transportation of loaded and empty semi-trailers on flat cars between Chicago and Denver, Chicago and Los Angeles, Calif., and Denver and Los Angeles.

The complaint says that the three roads named have been asked to provide such services, but only the U. P. had replied up to the time of the filing of the complaint. The U. P. reply, reproduced in the complaint's appendix, was a letter from H. A. Lawrence, traffic manager at Denver, who said he had taken the matter up with the road's general offices in Omaha, Nebr., and had been advised that propositions similar to Ringsby's "have been advanced by many trucking concerns on numerous occasions, and western carriers have declined these requests." Thus the U. P. "cannot entertain the proposal."

Meanwhile, the complaint asserted that the complainant was transporting property affecting the "prosecution of the present conflict," and it mentioned the critical rubber situation, which is "well known to defendants and especially to the Union Pacific." It asks for prompt handling of the matter by the commission, and wants the order which it seeks to include a requirement that tariffs covering the facilities and rates for handling the semi-trailers be published on less than the statutory notice of 30 days.

New Type Advertising Displays for Grand Central Terminal

A new type of advertising display signs has been installed in the main concourse and lower level of Grand Central terminal, New York. The signs are about 9 ft. wide by 7 ft. high, and in a depth of less than 12 in. give the illusion of three full dimensions. Each is animated with special lighting effects. Thus far 12 such displays have been placed.

One of the few major terminals in the country which heretofore has permitted commercial advertising of any kind within the station, Grand Central some 12 years ago first permitted a limited number of advertisers to utilize space. It was then stipulated by the New York Central and New York, New Haven & Hartford, railroads using the station, that all signs must be approved by the terminal's architects, and be in keeping with the dignity of the station. For several years poster-changing signs have been operated in the terminal. These are now being replaced.

The three-dimensional effect of the new displays is attained by compressing or foreshortening sculptured models within an actual depth of not more than 11 in. The models are set into a painted or, in some signs, a bas relief background. By use of carefully calculated lighting effects, an impression of horizon-distance perspective is achieved.

Most of the signs are animated to a limited extent by changing light effects and, in working out details of the displays, care has been taken to avoid garish or quick-flashing lights. Somewhat different from other signs in the present grouping is a motion picture advertisement, across which a curtain opens and closes once every 15 sec.

First agreement for advertising in Grand Central was given to the McArthur Indoor Advertising Company. The same company, now operating as the Terminal Electric Signs Company, is responsible for the present displays.

Mr. Berge Repeats Himself

According to Assistant Attorney General Wendell Berge, speaking before the Town Hall at Los Angeles, Calif., September 11, "Railroad rates today are not fixed by competition. There are some 60 rate associations and conferences throughout the United States which constitute the rate-making machinery of the railroad industry. Before any rate is filed with the Interstate Commerce Commission, it must find its way through the series of committees maintained by the rate association and conferences. This rate-making machinery is so geared as to exercise virtually complete control over the pricing of transportation services."

Says Monopoly Affected War Effort —The institution of an anti-trust suit against the western railroads, the Association of American Railroads, the Western Association of Railway Executives and individual executives in the industry, "in no way reflects upon the quality of co-operation which the railroads are presently giving the government in the war effort," he said, but "the fabric of our industrial and transportation structure would most certainly have been stronger and tougher for the war job if it had not been infested by monopoly practices."

The problem of transportation rates and services, the speaker declared, "should be a matter of special concern to the West. Transportation is so interwoven with the processes of production and distribution that it affects every article of commerce. The distance between the farmer and the manufacturer and the merchant is not to be measured in miles but in rates. Excessively high rates, discriminatory rates, by making impossible the exchange of products between various sections of the country, can retard the development of whole communities. It is futile to build plants or to seek capital for new enterprise in the West," asserted Mr. Berge, "no matter what its natural resources, in the face of transportation handicaps which stifle development and growth."

The speaker also "explained" to his audience that, "I know that there is a widespread belief that all rates and charges of railroads and other carriers are fixed by the Interstate Commerce Commission. But that is not the case. . . . The act does not contemplate that the commission shall review the fairness of all of the thousands and thousands of tariffs that are filed covering shipments of different commodities between different points throughout the United States."

What Congress Intended — Congress "never intended," he continued, "to substitute regulation for competition, but intended that both should operate. . . . The problem of the immediate future is not one of patriotism or of morals," he observed further. "It is rather one of economic policy. The business interests of this country have performed miracles of production and distribution under the stimulus of war, and we will forever be proud of the performance. But due sense of pride in our wartime accomplishment is not going to solve the problems of reconversion and of peace. I believe that our greatest hope for the future lies in policies which will again give competition and free enterprise a chance, and in the use of laws, so far as possible, to remove restraints on freedom rather than in the use of laws to regulate every detail of business life."

August Employment 5.03 Per Cent Above August, 1943

Railroad employment increased 0.41 per cent—from 1,442,623 to 1,448,548—during the one-month period from mid-July to mid-August, and the August total was 5.03 per cent above the comparable 1943 figure, according to the latest summary of preliminary reports prepared by the Bureau of Transport Economics and Statistics of the Interstate Commerce Commission. The index number, based on the 1935-1939 average and adjusted for seasonal variation, was 141.9 for August as compared with July's 141.4 and August, 1943's 135.1.

Employment in August was greater than in July in five of the seven groups reported, while declines of 0.01 per cent and 0.3 per cent were disclosed in the transportation (other than train, engine, and yard) and the yardmasters, switch-tenders, and hostlers groups, respectively. The largest change from the preceding month, on a percentage basis, was the increase of 1.41 per cent reported in the maintenance of way and structures category. This group also showed the largest change from the comparable 1943 month, the increase being 10.22 per cent. All other groups indicated increases from August, 1943, the smallest, measured in percentages, being the 1.22 per cent reported for the train and engine service group.

Football Teams Again Asked to Discourage Travel

So that the appeal of football games will not add to the wartime passenger burden of the railroads and intercity bus lines, Col. J. Monroe Johnson, director of the Office of Defense Transportation, has requested managers of all school, college and other football teams again this year to confine the sale and distribution of tickets

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Photograph Courtesy of Chesapeake & Ohio Railway Co.

in making efficient use of every ton of coal!

● **For 35 years you have been using Security Sectional Arches to save fuel.**

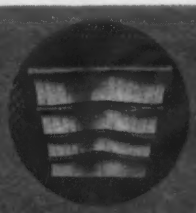
Today that function is more important than ever before.

When you burn a ton of coal today you are burning the man-hours used in mining, transporting and handling it, to say nothing of the equipment involved.

Today coal conservation takes on a new importance. One way to further it is to see that every locomotive leaving the roundhouse has a complete arch in its firebox.

HARBISON-WALKER REFRACTORIES CO.

Refractory Specialists



AMERICAN ARCH CO.

INCORPORATED

60 EAST 42nd STREET, NEW YORK, N. Y.

Locomotive Combustion Specialists

to residents of the immediate areas in which the games are to be played.

The O. D. T. also renewed its request that all football teams use coach accommodations so far as possible, and that no reservations for space be made until the day before departure. Because football teams, with schedules made far in advance, are in a position to make early reservations, they have an advantage over members of the armed forces and persons traveling on essential war business, who often must travel on short notice, it was pointed out, and by refraining from making advance reservations the teams can aid the war effort by leaving space available for essential travel.

The O. D. T. has been assured that the professional football teams again will use coaches wherever possible, will limit the number of players traveling, and will refrain from making Pullman reservations far in advance, thus continuing the cooperation which last year reduced team travel by about 37 per cent over the preceding year, according to Colonel Johnson's statement.

Supply Trade

Correction

E. J. Finkbeiner was incorrectly reported in the *Railway Age* of September 9 as having been appointed in charge of operations in all plants of the **American Car & Foundry Co.** Mr. Finkbeiner has been appointed a vice-president of the company and will continue in the operating department where he has served since May 1922.

Charles J. Hardy, Jr., whose election as a vice-president and director of the **American Car & Foundry Co.** was reported in the *Railway Age* of September 9, will have among his duties the handling of public relations for the company. Mr. Hardy was formerly a member of the law

Charles J. Hardy, Jr.

firm of Hardy, Stancliffe and Hardy and until recently was on active duty with the Navy. He was graduated from Williams College in 1917 and served in the last war as a naval reserve officer. After the war he was appointed a law clerk with Hardy, Stancliffe and Whitaker and completed his legal education at Fordham University. He became a member of the law firm of Hardy, Stancliffe and Hardy in April, 1930. He continued with that firm until December, 1941, when he was ordered to active duty by the Navy Department and assigned to headquarters, office of the commandant, third naval district. He held the rank of lieutenant-commander when he was released to inactive duty in March, 1944.

Wilbur C. Osha, until recently general welding superintendent at the Berwick, Pa., plant of the **American Car & Foundry Co.**, has been appointed general supervisor of welding for the company.

Littleton C. Barkley, manager of the New York office of the Manhattan Rubber Manufacturing division of **Raybestos-Manhattan, Inc.**, has been appointed sales manager of the Manhattan mechanical rubber goods sales department.

Fairbanks, Morse & Co., has purchased the **Pomona Pump Company**, a division of the Joshua Hendy Iron Works, in a $4,000,000 transaction. The Pomona firm has plants in Pomona, Calif., and St. Louis, Mo. No changes in personnel are contemplated.

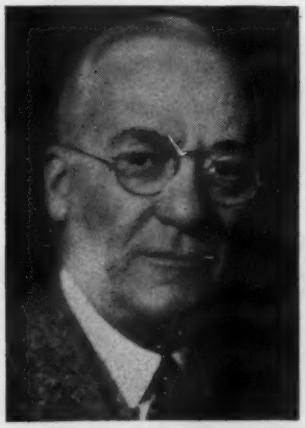
Leon C. Reed, manager of the Chicago district sales office of the **Inland Steel Company**, Chicago, has been promoted to assistant manager of the Railroad Sales division. **Kenneth J. Burns**, assistant to the manager of the Plate and Shape Sales division has been promoted to Chicago district sales manager.

The **A. S. Campbell Company**, Boston, Mass., has purchased the controlling interest in the **Hunt-Spiller Manufacturing Company** at Boston. The Hunt-Spiller Company will continue under its present name with its facilities supplemented by machining capacity and available floor space of the Campbell Company. **Neil C. Raymond**, president of the A. S. Campbell Company, will serve as president of both companies, and **Francis W. Wheeler** has been appointed a vice-president of Hunt-Spiller. **V. W. Ellet**, president of Hunt-Spiller, who has been affiliated with that company for 33 years, is retiring at his own request. Mr. Raymond joined the Campbell Company in 1932. Prior thereto he was associated with the Packard Motor Car Company.

OBITUARY

Simon Hoffmann, consultant for the Superheater Company, died September 9, in Berkeley, Calif.

Argyle Campbell, president of the Enterprise Railway Equipment Company, Chicago, whose death in California on August 12 was reported in the *Railway Age* of August 19, was born at Bethany, W. Va., on December 12, 1874, and was graduated from Bethany College in 1895. He began his railway career with the Pennsylvania in the same year and three years later resigned to enter the employ of the Pressed Steel Car Company where he advanced to mechanical engineer. In 1902, he resigned to become assistant to the president of the Standard Steel Car Company at Pittsburgh, Pa., and later was made western sales representative at Chicago. In 1905 he formed



Argyle Campbell

the Enterprise Railway Equipment Company, and served as vice-president until 1908 when he was elected president.

Equipment and Supplies

LOCOMOTIVES

The Companhia Vale do Rio Doce, Brazil, has ordered eight steam locomotives of 2-8-2 wheel arrangement from the Baldwin Locomotive Works.

The Portuguese Government Railways has ordered 22 steam locomotives of 2-8-2 wheel arrangement from the American Locomotive Company.

FREIGHT CARS

The Central of Brazil is inquiring for 250 ore cars of 75 metric tons' capacity.

The Missouri Pacific is inquiring for 700 40½-ft. box cars of 50 tons' capacity and 300 50½-ft. box cars of 50 tons' capacity.

PASSENGER CARS

The Northern Pacific is asking for quotations on an order for 24 or 36 lightweight de luxe passenger-train coaches of alloy steel construction.

Construction

War Department.—The U. S. Engineer office, Savannah, Ga., has awarded a contract, amounting to $118,152, to the V. P. Loftis Company, Charlotte, N. C., for the construction and completion of a railroad spur and storage yard in Georgia. The U. S. Engineer office, Sacramento, Cal., has awarded a contract, amounting to $270,599, to the L. F. Dow Company, Los Angeles, Cal., for the construction of a rail-

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FULL THROTTLE TOWARD THE FINAL BLOW

—so that there shall be no let down in getting under way all the goods which victory needs.

• • •

American multiple-valve throttles play an important part in this effort.

A-1672

AMERICAN THROTTLE COMPANY, INC.

60 East 42nd Street
NEW YORK 17, N.Y.

Sales Representatives:

THE SUPERHEATER COMPANY

122 S. Michigan Blvd.
CHICAGO 3, ILL.

Canada: The Superheater Company, Ltd., Montreal

road crossover, fire walls and floors in California. The U. S. Engineer office, Philadelphia, Pa., has awarded a contract, amounting to $58,344, to the Industrial Engineering Company, New York, for the construction of a railroad and regrading of road in New Jersey.

BALTIMORE & OHIO.—This railroad has awarded a contract for the reconstruction of its bridge at Lamberton, W. Va., at estimated cost of $31,000, to C. F. Englehart, Johnstown, Pa.

VIRGINIAN.—This railroad has awarded a contract for the construction of shop buildings at Princeton, W. Va., at estimated cost of $400,000, to the Trimble Company, Pittsburgh, Pa.

Financial

ALABAMA, TENNESSEE & NORTHERN.—*Reorganization.*—The reorganization committee of the Alabama, Tennessee & Northern Railroad Corporation has applied to the Interstate Commerce Commission for an order authorizing the transfer of properties to the Alabama, Tennessee & Northern Railroad Company, and for other authority necessary to carry out the previously-approved plan of reorganization. The reorganized company's capital structure will include $1,718,700 of general mortgage, 4½ per cent, contingent interest, bonds, series A, a contingent interest 15-year note to the Reconstruction Finance Corporation in the amount of $271,407, and 15,937 shares of no-par stock.

CENTRAL OF GEORGIA.—*Equipment Notes.*—The Central of Georgia has asked for bids by September 20 on $665,120 of two per cent promissory notes to be used in part payment for 450 all steel box cars ordered from the American Car & Foundry Co. The railroad will pay $982,680 or 60 per cent of the cost of the equipment in cash and the balance of $665,120 in four equal semi-annual installments.

DELAWARE & BOUND BROOK.—*Par Value of Stock.*—This company, which owns the line from the Delaware river to Bound Brook Junction, N. J., operated by the Reading under lease, has applied to the Interstate Commerce Commission for authority to change the par value of its $1,800,000 of capital stock from $100 per share to $25.

DENVER & RIO GRANDE WESTERN-WESTERN PACIFIC.—*Lease of Salt Lake Union Depot.*—These roads have applied to the Interstate Commerce Commission for approval of the terms of a 20-year joint lease of the facilities of the Salt Lake Union Depot & Railroad, of which they are the joint owners of the entire capital stock.

ERIE.—*Bonds.*—This company has applied to the Interstate Commerce Commission for authority to issue $13,000,000 of first consolidated mortgage bonds, series E, the proceeds, together with other funds furnished by the applicant, to be used to retire $7,430,000 of the Long Dock Company's consolidated mortgage 3¾ per cent mortgage bonds, and $5,955,000 of the Erie Railroad first consolidated mortgage bonds, series C. The former would be called at a premium of 2 per cent and accrued interest, and the latter at a premium of 4½ per cent and accrued interest. The new bonds, issued under the applicant's first consolidated mortgage which requires a sinking fund, would be dated October 1, 1944, with a maturity date of October 1, 1964. They would bear interest at a rate to be determined by competitive bids, and would be redeemable at prices ranging from 5 per cent above the accepted bid to par.

GREAT NORTHERN.—*Bond Issue Awarded.*—On September 12, the Great Northern awarded its entire $100,000,000 issue of general mortgage bonds to Halsey, Stuart & Co. and associates on the following bids: 100.88 for $35,000,000 of 3⅛ per cent bonds, series K, due January 1, 1960; 100.13 for $30,000,000 of 3⅜ per cent bonds, series L, due January 1, 1970; and 100.76 for $35,000,000 of 3½ per cent bonds, series M, due January 1, 1980. On a "basket" bid for bonds maturing both in 1970 and 1980 the group offered 100.18 and 100.81, respectively. The bonds were reoffered for sale to the public at 101.52 for the 1960 maturities; 101.28 for the 1970 maturities; and 102.04 for the 1980 maturities. Details of the railroad's refunding plan under which the bonds were issued were reported in the *Railway Age* of August 26.

GULF, MOBILE & OHIO.—*Bond Refunding.*—The Gulf, Mobile & Ohio has asked for bids by September 19 for the purchase of $10,500,000 of first and refunding mortgage bonds, series D, due October 1, 1969. Proceeds will be used to redeem the $2,000,000 publicly-held series A 3¾ per cent collateral trust bonds due July 1, 1953, and the entire $8,600,000 series B, 4 per cent collateral trust bonds due July 1, 1958.

SEABOARD.—*Acquisition.*—The Seaboard Railway Company has applied to the Interstate Commerce Commission for authority to acquire the Seaboard-All Florida properties, including the Florida, Western & Northern, and the East & West Coast, for which it was the highest bidder (offering $9,350,000) at the recent foreclosure sale in Miami. The application asks that the commission act before the October 2 court hearing for confirmation of the sale, which cannot be confirmed until the proposed acquisition receives I. C. C. approval. After allowance for the Seaboard Air Lines' prior lien claims and the distributive share due on the Seaboard-All Florida bonds held by S. A. L. (both made available to the applicant by the S. A. L. receivers), the transaction will involve a cash outlay of $1,774,560, including expenses.

TERMINAL RAILROAD ASSOCIATION OF ST. LOUIS.—*Acquisition.*—Deposits or commitments for deposits are reported to have been received from 77 per cent of the 6 per cent capital stock of the Tunnel Railroad of St. Louis and from 73 per cent of the 6 per cent first preferred stock and 3 per cent second preferred stock of the St. Louis Bridge Company, under the Terminal Company's offer to exchange new 4 per cent bonds due July 1, 2019, for stocks of the two companies. (Previous item in *Railway Age* of August 26.)

TAMPA NORTHERN.—*Trustee.*—Cody Fowler, recently appointed by the court as trustee of this road to succeed the late George C. Thomas, has asked the Interstate Commerce Commission to ratify his appointment and to approve compensation of $4,000 a year.

WESTERN PACIFIC.—*Reorganization Expenses.*—Divison 4 of the Interstate Commerce Commission has approved maximum expenses of this road's reorganization committee, not including attorneys' fees and expenses, of $197,111, of which $60,638 is fixed as the limit for contingent tax liability.

Average Prices Stocks and Bonds

	Sept. 12	Last week	Last year
Average price of 20 representative railway stocks..	39.93	40.81	36.53
Average price of 20 representative railway bonds..	88.41	88.82	78.21

Dividends Declared

Chicago & Eastern Illinois "A".—$1.00, payable October 16 to holders of record September 30.

Norwich & Worcester.—5% preferred, $2.00, quarterly, payable October 2 to holders of record September 15.

Oahu Railway & Land.—50¢, payable September 12 to holders of record September 5.

Dividends in First Six Months

Dividends appropriated by Class I roads during the first half of this year amounted to $86,427,040, as compared to $81,004,010 for the same period last year, according to statistics compiled by the Bureau of Transport Economics and Statistics of the Interstate Commerce Commission. Dividend appropriations of all such roads reporting any during this period are tabulated below.

	First half	
Railway	1944	1943
Akron, Cant. & Young....	$55,095	.....
Alabama Great Southern..	1,008,932	$1,008,932
Atch., Topeka & Santa Fe	10,385,500	10,385,500
Atlantic Coast Line	1,240,059	1,240,059
Bangor & Aroostook	191,400	191,400
Cambria & Indiana	120,000	120,000
Charleston & W. Carolina.	72,000	72,000
Chesapeake & Ohio	11,486,031	11,791,079
Chicago & East. Illinois..	383,863	383,863
Chicago Great Western...	457,640	686,449
Cinc., New Orl. & T. P.	1,855,335	1,855,335
Detr. & Tol. Shore Line..	180,000	270,000
Detr., Tol. & Ironton	490,664	490,664
Erie	3,244,925	3,232,904
Great Northern	2,498,899	2,498,899
Green Bay & Western....	125,000	125,000
Gulf, Mobile & Ohio.....	708,804	.....
Illinois Terminal	250,000	.....
Kansas, Okla. & Gulf....	208,294	93,384
Lake Superior & Ishpeming	214,200	214,200
Lehigh & Hudson River..	.....	141,210
Louisiana & Arkansas....	150,000	150,000
Louisville & Nashville	2,340,000	2,340,000
Maine Central	55,649	68,100
Minneapolis & St. Louis...	300,000	.....
Nashville, Chat. & St. L.	255,982	255,982
New York Central	3,223,697	3,223,697
Norfolk & Western	7,253,231	7,256,770
Pennsylvania	13,167,754	13,167,754
Pittsburgh & Lake Erie..	2,159,125	2,159,125
Reading	2,098,993	2,098,993
Richmond, Fred. & Pot....	430,032	435,229
Southern	2,596,400	2,596,400
Southern Pacific	4,715,954	.....
Tennessee Central	70,000	17,500
Texas & Pacific	592,575	592,575
Union Pacific	8,659,592	8,659,592
Virginian	1,563,575	1,563,575
Wabash	598,186	598,186
Wheeling & Lake Erie....	1,019,654	1,019,654

News Department continued on next left-hand page

S-T-R-E-T-C-H Engine Mileage

INCREASED locomotive mileage, improved economy, and lower maintenance costs are benefits enjoyed by roads using HUNT-SPILLER *Air Furnace* GUN IRON wear-resisting parts. That most roads do use HSGI parts is one of the important reasons why motive power has been able to do all that is being asked of it — and more.

There is super service in each of the locomotive components listed below. Use all of them for greatest benefits.

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Hub Liners
Shoes and Wedges
Floating Rod Bushings

Finished Parts

Dunbar Sectional Type Packing
Duplex Sectional Type Packing
for Cylinders and Valves
(Duplex Springs for Above
Sectional Packing)
Cylinder Snap Rings
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Railway Officers

EXECUTIVES

R. E. Davies, assistant to the former trustees of the Minneapolis, St. Paul & Sault Ste. Marie (Soo Line) with headquarters at Minneapolis, Minn., has been promoted to executive assistant, with the same headquarters.

FINANCIAL, LEGAL AND ACCOUNTING

J. J. Taylor, tax commissioner and real estate agent of the Kansas City Southern, with headquarters at Kansas City, Mo., has been promoted to general tax commissioner of that road and also of the Louisiana & Arkansas, with the same headquarters.

Martin L. Cassell, Jr., whose promotion to general attorney of the Chicago, Rock Island & Pacific, with headquarters at Chicago, was reported in the *Railway Age* of

Martin L. Cassell, Jr.

August 26, was born at Vincennes, Ind., on October 3, 1910, and was graduated from the University of Illinois in 1935. Mr. Cassell became associated with the legal firm of Hamilton, Black & Kratt, Peoria, Ill., and in 1940 he entered railway service as an assistant general attorney of the Rock Island, with headquarters at Chicago, the position he held at the time of his new appointment.

Ralph M. Buzek, commerce attorney of the Western lines of the Baltimore & Ohio, with headquarters at Cincinnati, Ohio, has been promoted to assistant general solicitor of the Western lines, with the same headquarters.

Eaton Adams, whose promotion to general attorney of the Chicago, Rock Island & Pacific, with headquarters at Chicago, was reported in the *Railway Age* of August 26, was born at Kansas City, Mo., on September 26, 1902, and was graduated from the University of Missouri in 1927. In that year he began the practice of law at Kansas City with his father and a brother, and in 1930 he became associated with the legal firm of Baker, Botts, Andrews & Warton. In 1933 Mr. Adams returned to his former connection as a partner, entering railway service

Eaton Adams

on April 1, 1941, as an assistant general attorney of the Rock Island, with headquarters at Chicago, the position he held at the time of his new appointment.

OPERATING

W. C. Rapp, assistant superintendent of the Union Railway (part of the Missouri Pacific System), with headquarters at Memphis, Tenn., has retired after 58 years of service.

W. S. Baker, whose promotion to the position of general superintendent of Charleston & Western Carolina with headquarters at Augusta, Ga., was announced in the September 2 *Railway Age*, was born at Owassa, Ala., on September 4, 1894. On January 4, 1913, he entered the service of the Louisville & Nashville as telegrapher, remaining with that company as telegrapher and dispatcher until March 1, 1919. He then went with the Atlantic Coast Line as dispatcher of the Charleston (N. C.) dis-

W. S. Baker

trict, subsequently serving as chief dispatcher at Montgomery, Ala.; and trainmaster at that place, Savannah, Ga., and Dothan, Ala. On July 11, 1942, Mr. Baker was appointed acting superintendent, Jacksonville terminals district, being named superintendent of the Tampa district on July 15, 1943. He continued as superintendent at Tampa, Fla., until his recent advancement to the post of general superintendent of the Charleston & Western Carolina at Augusta.

Vern Elliott, acting superintendent of the Minneapolis-Duluth division of the Minneapolis, St. Paul & Sault Ste. Marie (Soo Line), with headquarters at Superior, Wis., has been promoted to superintendent of that division.

W. G. Miller, assistant to the chief operating officer of the Minneapolis, St. Paul & Sault Ste. Marie (Soo Line) with headquarters at Minneapolis, Minn., has been promoted to assistant to the general manager, with the same headquarters.

K. V. Conrad, whose appointment as general superintendent of transportation of the Norfolk & Western at Roanoke, Va., was announced in the *Railway Age* of September 2, entered the service of the Norfolk & Western as a messenger at Roanoke on February 1, 1903. He held various clerical positions in the office of the superintendent of transportation until June, 1918, when he was appointed chief clerk to the

K. V. Conrad

transportation assistant to the regional director, United States Railroad Administration. Two years later, Mr. Conrad was appointed chief clerk to the general superintendent of transportation, becoming assistant superintendent of transportation on June 1, 1931. He was promoted to superintendent of transportation at Roanoke in January, 1942, continuing in that capacity until his present advancement to general superintendent of transportation at the same location.

L. M. Palmquist, assistant superintendent of the Iowa division of the Chicago, Milwaukee, St. Paul & Pacific, with headquarters at Perry, Iowa, has been promoted to acting superintendent of the Hastings and Dakota division, with headquarters at Aberdeen, S. C., succeeding **F. R. Doud,** who has been granted leave of absence to enter military service. **A. J. Farnham,** trainmaster at Minneapolis, Minn., has been advanced to acting assistant superintendent of the Iowa division, replacing Mr. Palmquist. **J. J. Van Bockern,** trainmaster, with headquarters at Savanna, Ill., has been

transferred to Davenport, Iowa, relieving **K. R. Schwartz,** who has been transferred to the Milwaukee Terminal division, with headquarters at Milwaukee, Wis., succeeding **C. E. Crippen,** who has been granted leave of absence to enter military service.

E. O. Walters, general manager of the Kansas City Southern Transport Company (a subsidiary of the Kansas City Southern), has been appointed assistant to the general manager of the Kansas City Southern, with headquarters as before at Kansas City, Mo. He will continue as general manager of the subsidiary company.

Leo Elbert Windham, whose appointment as superintendent of the Atlantic Coast Line at Tampa, Fla., was announced in the *Railway Age* of September 2, was born on January 10, 1894, at Hoffman, N. C. On October 9, 1909, he entered railway service with the Seaboard Air Line at Hamlet, N. C., as operator. After serving successively as train dispatcher and night chief dispatcher for that road, Mr. Windham joined the Atlantic Coast Line at Lakeland, Fla., on November 10, 1921, as train dispatcher. On July 1, 1923, he was promoted to chief dispatcher, and was advanced to trainmaster of the Jacksonville district at Sanford, Fla., on December 1, 1928. Transferred to Tampa in the same capacity on April 1, 1930, Mr. Windham continued in that position until his present appointment as superintendent at Tampa.

Leo Elbert Windham

F. L. Kobliska, chief dispatcher of the Minneapolis, St. Paul & Sault Ste. Marie (Soo Line), with headquarters at Thief River Falls, Minn., has been promoted to trainmaster, with the same headquarters. **K. R. Bovee** has been appointed trainmaster, with headquarters at Ironton, Minn., and **W. M. Olds** has been appointed trainmaster, with headquarters at Gladstone, Mich., succeeding **I. L. Fardal,** who has been transferred to Enderlin, N. D.

TRAFFIC

Edward G. Clark, whose retirement as general traffic manager of the Minneapolis, St. Paul & Sault Ste. Marie (Soo Line) was reported in the *Railway Age* of September 9, was born at Howell, Mich., on May 2, 1872, and entered railway service in 1893 with the Western Transit Company at Minneapolis, Minn., as a stenographer and clerk. During 1896 and 1897, he was a stenographer on the Wisconsin Central (now part of the Soo Line) at Minneapolis, and also at Milwaukee, Wis., and in September, 1897, became chief clerk in the general freight office at Minneapolis. On May 1, 1899, Mr. Clark was promoted to New England agent, with headquarters at Boston, Mass., and later served as general agent at Milwaukee. On December 1, 1902, he was promoted to assistant general freight agent at Milwaukee, and was transferred to Minneapolis in April, 1909. In April, 1916, he was promoted to general freight agent at Minneapolis, and on April 2, 1928, he was promoted to freight traffic manager, with the same headquarters. In May, 1938, he was advanced to the position he held at the time of his retirement.

Edward G. Clark

Samuel R. Goodman, assistant to vice-president, traffic, of the Southern at Washington, D. C., has been appointed assistant freight traffic manager, with the same headquarters.

A. B. Kelley, assistant freight agent of the Central of Georgia, with headquarters at Miami, Fla., has been promoted to western traffic agent, with headquarters at St. Louis, Mo.

ENGINEERING & SIGNALING

B. S. Converse, assistant engineer of the Galena division of the Chicago & North Western, with headquarters at Chicago, has been promoted to division engineer of the Sioux City district of the Iowa and Northern Iowa divisions, with headquarters at Sioux City, Iowa, succeeding **A. E. Benson,** who has been assigned to other duties.

MECHANICAL

R. D. Johnson and **H. J. LaVine** have been appointed assistant fuel supervisors of the Minneapolis, St. Paul & Sault Ste. Marie (Soo Line), with headquarters at Minneapolis, Minn., and Superior, Wis., respectively.

Wilbur H. Powell, road foreman of engines of the Ohio division of the Baltimore & Ohio, with headquarters at Chillicothe, Ohio, has been promoted to supervisor of locomotive operation, with headquarters at Cincinnati, Ohio, succeeding **Joseph F. Hodapp,** who has retired after 31 years of service.

SPECIAL

Paul M. Bunting, assistant to the general freight agent of the St. Louis Southwestern, with headquarters at St. Louis, Mo., has been promoted to director of public relations, with the same headquarters, succeeding **A. C. McKibbin,** who has retired after 21 years service.

PURCHASES AND STORES

Russell W. Tomlinson, whose appointment as assistant purchasing agent of the Reading at Reading terminal, Philadelphia, Pa., was announced in the *Railway Age* of September 9, was born at Philadelphia on January 15, 1902. He attended Banks Business College and Temple University, and entered the service of the Reading on January 2, 1920, as clerk in the freight claim department. On June 16, 1920, he was transferred to the purchasing department in the same position, becoming assistant chief clerk in that department on April 1, 1941. This post Mr. Tomlinson held until his present promotion to assistant purchasing agent at Philadelphia.

Russell W. Tomlinson

OBITUARY

Arthur L. Wilde, auditor of freight accounts of the Northern Pacific, with headquarters at St. Paul, Minn., died in that city on September 6.

H. H. Butler, who retired in 1933 as assistant general passenger agent of the Missouri Pacific, with headquarters at St. Louis, Mo., died at his home in Hot Springs, Ark., recently.

Victor L. Wulff, who retired in 1940 as assistant to the general passenger agent of the Missouri Pacific, with headquarters at Kansas City, Mo., died at his home in that city recently.

JAPANESE TRAVELERS must now obtain special permits from police before setting out on a trip of more than 62 miles, reports Foreign Commerce Weekly. On April 1, all fast trains, first-class accommodations, dining cars and sleeping cars are said to have been withdrawn from service.

17

"I FIGURE WE'LL WORK OURSELVES OUT OF A JOB IN 17 MONTHS!"

When it comes to knowing a good thing when they see it, the railroads of America take top rank. The adoption of the Westinghouse Air Brake was so immediate and its use was so rapidly extended that manufacturing facilities had to be continuously increased . . . and were just as continuously overtaxed.

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TO PERMIT TODAY'S TRAINS TO MOVE AT SHORTER INTERVALS WITH HEAVIER LOADS AT HIGHER SPEEDS—SAFELY.

Freight Operating Statistics of Large Steam Railways—Selected Items

Region, road, and year	Miles of road operated	Train-miles	Locomotive-miles: Principal and helper	Locomotive-miles: Light	Car-miles: Loaded (*thousands*)	Car-miles: Per cent loaded	Ton-miles (*thousands*): Gross excl. locos. & tenders	Ton-miles (*thousands*): Net-rev. and non-rev.	Road locos. on line: Serviceable: Unstored	Road locos. on line: Serviceable: Stored	Road locos. on line: B. O.	Road locos. on line: Per cent B. O.
New England Region:												
Boston & Albany 1944	362	163,975	192,701	26,923	4,049	61.6	277,221	118,107	78	..	15	16.1
1943	362	163,321	196,537	35,302	4,097	62.7	274,544	117,488	82	..	12	12.8
Boston & Maine..... 1944	1,807	371,533	423,829	41,179	13,689	66.6	899,059	405,366	155	..	17	9.9
1943	1,812	391,870	459,408	50,696	13,194	64.5	895,936	401,525	162	..	22	12.0
N. Y., New H. & Hartf.† 1944	1,815	516,829	646,098	60,600	18,511	65.0	1,190,552	520,897	235	2	23	14.7
1943	1,815	489,356	608,742	59,310	17,571	65.9	1,106,230	480,017	212	5	44	19.7
Great Lakes Region:												
Delaware & Hudson..... 1944	846	312,980	376,987	35,829	13,254	65.7	947,368	501,170	136	51	31	14.2
1943	848	322,113	385,098	32,282	12,206	63.7	898,314	467,084	139	47	37	16.6
Del., Lack. & Western..... 1944	971	366,890	428,776	67,990	15,925	68.6	1,059,264	504,082	137	34	26	13.2
1943	972	411,188	503,474	103,072	18,202	62.4	1,271,970	579,323	163	4	33	16.5
Erie 1944	2,244	939,648	1,005,587	70,646	43,890	66.0	2,910,445	1,272,477	320	28	55	13.6
1943	2,242	1,024,452	1,095,113	74,777	45,290	64.2	3,014,459	1,304,180	320	8	74	18.4
Grand Trunk Western..... 1944	1,026	258,763	265,740	2,366	8,429	65.1	537,775	231,314	68	..	11	13.9
1943	1,026	298,861	304,286	2,411	9,140	64.1	625,807	283,045	70	2	10	12.2
Lehigh Valley 1944	1,247	584,708	655,290	94,243	24,547	59.6	1,801,060	852,317	156	..	11	6.6
1943	1,248	486,342	541,869	89,973	20,518	60.2	1,484,196	696,154	144	..	13	8.3
New York Central 1944	10,325	3,599,171	3,868,293	247,216	137,110	62.5	9,700,768	4,534,690	1,150	20	244	17.3
1943	10,365	3,757,479	4,030,856	238,353	136,386	58.9	9,900,120	4,439,080	1,207	12	188	13.4
New York, Chi. & St. L..... 1944	1,657	836,804	843,999	9,451	33,010	65.4	2,196,137	981,440	173	..	13	7.0
1943	1,657	808,610	825,497	11,298	30,943	65.0	2,059,510	930,600	168	..	21	11.1
Pere Marquette 1944	1,915	433,907	450,153	11,685	14,764	65.7	1,003,474	473,431	143	..	25	14.9
1943	1,975	450,544	469,243	13,245	13,831	64.8	949,125	444,983	135	3	24	14.8
Pitts. & Lake Erie 1944	229	96,393	101,808	93	4,353	65.7	372,073	221,847	34	..	11	24.4
1943	231	83,198	87,278	436	3,505	66.9	303,823	184,650	38	2	8	16.7
Wabash 1944	2,381	759,417	781,810	18,015	27,640	68.5	1,809,416	817,215	174	5	42	19.0
1943	2,381	746,321	776,651	15,804	27,936	69.6	1,819,135	833,933	184	7	33	14.7
Central Eastern Region:												
Baltimore & Ohio 1944	6,110	2,512,356	3,127,573	307,307	86,838	62.7	6,445,194	3,227,464	921	..	207	18.4
1943	6,116	2,415,264	2,965,906	337,410	79,876	61.6	5,840,569	2,815,451	906	2	220	19.5
Central of New Jersey†..... 1944	655	236,204	275,281	60,509	8,080	59.5	607,602	303,521	112	14	22	14.9
1943	657	263,107	297,502	56,221	8,326	63.6	586,682	295,889	141	3	16	10.0
Chicago & Eastern Ill. 1944	*12	343,724	355,910	12,880	10,595	59.6	759,078	343,446	80	..	6	7.0
1943	912	300,125	314,483	10,098	8,826	59.1	628,416	278,592	78	..	8	9.3
Elgin, Joliet & Eastern..... 1944	392	135,475	139,599	3,708	3,751	66.9	293,829	161,850	62	..	14	18.4
1943	392	126,891	129,990	2,497	3,304	64.5	263,842	141,312	60	..	16	21.1
Long Island 1944	372	35,142	36,633	15,635	381	55.1	28,852	12,517	43	..	6	12.2
1943	374	35,082	36,684	14,457	344	53.8	28,052	12,748	36	..	5	12.2
Pennsylvania System 1944	9,880	4,823,168	5,619,083	726,493	186,484	62.2	13,608,885	6,626,582	2,014	2	204	9.2
1943	9,932	4,794,982	5,576,464	776,784	174,579	59.1	12,941,092	6,026,808	1,988	..	171	7.9
Reading 1944	1,409	581,087	655,525	87,709	18,411	64.3	1,399,318	756,365	262	13	44	13.8
1943	1,417	543,608	606,220	76,230	16,633	60.6	1,286,972	667,797	278	17	37	11.1
Pocahontas Region:												
Chesapeake & Ohio..... 1944	3,032	1,128,162	1,219,713	56,850	52,797	56.8	4,614,363	2,650,034	430	4	66	13.2
1943	3,031	906,017	976,595	42,583	39,167	56.6	3,335,366	1,859,219	425	2	81	15.9
Norfolk & Western..... 1944	2,132	811,511	863,259	59,570	38,390	59.0	3,299,580	1,785,154	290	26	20	6.0
1943	2,134	716,324	761,654	49,471	29,645	57.1	2,530,983	1,335,220	305	18	22	6.4
Southern Region:												
Atlantic Coast Line..... 1944	4,953	1,016,744	1,029,888	13,540	27,151	63.6	1,839,436	824,121	363	10	33	8.1
1943	4,951	1,045,151	1,070,729	15,740	28,260	62.8	1,894,951	830,836	366	2	30	7.5
Central of Georgia†..... 1944	1,783	374,277	384,342	6,817	8,640	64.8	585,723	264,697	98	..	7	6.7
1943	1,783	330,069	342,780	5,599	7,507	68.7	496,730	223,296	107	..	10	8.5
Gulf, Mobile & Ohio..... 1944	1,962	308,080	387,525	2,596	11,018	72.3	721,606	351,470	110	..	11	9.1
1943	1,962	334,217	410,030	736	10,421	66.4	710,698	337,483	111	..	10	8.3
Illinois Central (incl. 1944	6,347	1,672,273	1,685,640	31,594	64,591	63.9	4,474,938	2,100,060	656	..	42	6.0
Yazoo & Miss. Vy.)..... 1943	6,348	1,784,848	1,802,219	32,462	67,083	59.8	4,863,018	2,225,680	609	..	72	10.6
Louisville & Nashville 1944	4,734	1,600,814	1,730,915	42,442	41,543	62.4	3,021,371	1,522,103	422	12	62	12.5
1943	4,736	1,524,665	1,673,624	40,042	36,201	61.5	2,614,258	1,264,043	426	5	51	10.6
Seaboard Air Line* 1944	4,161	910,312	1,119,205	18,841	24,920	67.3	1,652,108	741,767	310	2	50	13.8
1943	4,166	957,441	1,085,037	11,711	24,692	67.3	1,653,698	753,450	295	..	42	12.5
Southern 1944	6,479	2,163,568	2,208,503	35,650	48,677	68.1	3,174,502	1,473,518	604	..	80	11.7
1943	6,478	1,983,765	2,024,748	27,076	43,297	69.1	2,760,188	1,257,030	596	..	84	12.4
Northwestern Region:												
Chi. & North Western..... 1944	8,074	1,002,655	1,047,250	21,935	32,572	68.3	2,214,363	1,009,732	381	14	89	18.4
1943	8,098	1,013,908	1,054,360	21,981	31,780	64.9	2,220,958	1,032,850	362	35	95	19.3
Chicago Great Western 1944	1,445	272,808	278,831	6,221	8,831	72.7	569,541	263,132	78	..	4	4.9
1943	1,445	275,435	283,253	10,722	8,536	70.5	567,517	260,378	76	..	6	7.3
Chi., Milw., St. P. & Pac.†.. 1944	10,715	1,481,176	1,567,570	66,227	50,310	69.9	3,346,682	1,624,474	497	43	68	11.2
1943	10,757	1,528,036	1,620,186	64,108	49,263	67.1	3,344,487	1,573,688	494	39	74	12.2
Chi., St. P., Minneap. & Om.. 1944	1,606	196,019	209,926	10,875	5,301	69.4	359,723	168,905	93	26	13	9.8
1943	1,614	199,760	210,988	11,245	5,112	67.9	348,086	159,683	94	27	9	6.9
Duluth, Missabe & I. R..... 1944	546	171,699	172,581	1,287	9,477	50.7	887,479	544,810	54	..	..	..
1943	546	166,856	167,687	1,070	9,164	51.2	846,914	519,860	52	1	6	10.2
Great Northern 1944	8,276	1,187,497	1,182,754	49,202	48,320	69.4	3,485,613	1,833,692	399	14	53	11.4
1943	8,006	1,201,082	1,199,889	41,787	47,900	68.5	3,521,773	1,850,699	396	10	54	11.7
Min., St. P. & S. St. M.†... 1944	4,259	431,413	443,750	8,702	12,240	67.5	838,510	410,263	127	1	6	4.5
1943	4,258	421,007	430,910	7,035	11,450	65.2	803,377	389,317	129	6	3	2.2
Northern Pacific 1944	6,571	873,839	932,486	69,612	36,924	76.7	2,433,824	1,265,800	363	20	53	12.2
1943	6,572	948,941	1,018,305	77,955	37,694	75.4	2,496,871	1,283,258	378	26	40	9.0
Central Western Region:												
Alton† 1944	915	252,197	266,972	505	6,690	65.9	464,760	224,417	71	2	5	6.4
1943	915	249,770	268,571	252	6,873	67.9	466,223	256,064	70	3	7	8.8
Atch., Top. & S. Fe (incl. 1944	13,093	3,494,527	3,740,612	231,852	130,231	64.6	8,795,497	3,382,769	863	8	107	10.9
G. C. & S. F. & P. & S. F.) 1943	13,148	3,044,834	3,306,573	208,388	100,776	62.8	7,077,879	2,738,267	822	1	102	11.0
Chi., Burl. & Quincy..... 1944	8,794	1,383,276	1,455,165	45,724	52,229	66.7	3,634,340	1,751,777	458	..	69	13.1
1943	8,833	1,362,195	1,435,239	45,237	47,239	66.0	3,282,892	1,550,322	484	..	66	12.0
Chi. Rock I. & Pac.†..... 1944	7,718	1,379,750	1,452,074	16,351	41,178	63.3	2,804,019	1,211,133	410	..	63	13.3
1943	7,718	1,557,558	1,616,409	19,609	44,670	64.4	3,037,313	1,326,851	399	..	67	14.4
Denver & R. G. Wn.†..... 1944	2,391	408,060	461,513	74,495	14,570	77.2	908,850	448,416	153	10	41	20.1
1943	2,405	449,197	517,695	77,818	15,512	71.8	1,018,132	494,892	172	1	42	19.5
Southern Pacific—Pac. Lines. 1944	8,193	2,289,606	2,622,582	385,476	97,923	69.1	6,321,360	2,647,432	842	..	119	12.4
1943	8,230	2,397,199	2,689,898	370,857	97,895	66.1	6,587,286	2,734,461	862	2	93	9.7
Union Pacific 1944	9,782	2,619,936	2,787,879	227,555	104,948	74.4	6,592,400	3,161,245	740	54	62	7.2
1943	9,812	3,017,589	3,199,916	272,212	104,301	66.6	6,939,905	3,056,486	824	..	60	6.8
Southwestern Region:												
Mo.-Kans.-Texas Lines 1944	3,241	906,660	939,771	17,607	24,703	58.8	1,714,313	749,180	154	..	16	9.4
1943	3,281	683,899	702,403	12,997	17,702	62.6	1,207,950	537,541	159	..	16	9.1
Missouri Pacific† 1944	7,071	1,686,681	1,760,453	38,382	59,561	64.6	4,081,276	1,859,618	495	2	56	10.1
1943	7,071	1,747,322	1,863,517	47,227	56,743	65.2	3,924,999	1,803,494	489	1	75	13.3
Texas & Pacific 1944	1,882	418,624	418,624	6,059	13,955	65.5	925,274	375,396	124	16	12	7.9
1943	1,882	412,527	412,527	9,335	12,981	70.8	857,964	354,377	110	16	13	9.4
St. Louis-San Francisco† 1944	4,616	1,097,645	1,177,079	28,285	26,519	61.7	1,850,691	824,001	318	..	30	8.6
1943	4,634	1,139,362	1,247,746	31,519	28,555	62.6	1,992,517	898,595	334	..	18	5.1
St. Louis-San Fran. & Texas. 1944	159	36,383	37,571	41	574	64.0	38,886	16,057	8	..	1	11.1
1943	159	36,123	37,387	24	600	67.8	39,380	17,175	11	..	..	..
St. Louis Southw. Lines† ... 1944	1,600	560,280	575,244	7,954	19,502	69.5	1,221,091	528,273	123	2	24	16.1
1943	1,600	540,750	556,043	7,575	17,213	67.6	1,147,211	477,823	121	2	19	13.4
Texas & New Orleans 1944	4,339	1,104,743	1,109,668	23,272	30,297	67.1	1,993,182	889,354	259	1	17	6.1
1943	4,339	1,161,874	1,198,537	48,709	31,429	62.3	2,194,901	952,843	256	2	18	6.5

* Report of receivers.
† Report of trustee or trustees.
Compiled by the Bureau of Transport Economics and Statistics, Interstate Commerce Commission. Subject to revision.

for the Month of June 1944, Compared with June 1943

Region, road, and year		Freight cars on line: Home	Foreign	Total	Per Cent B. O.	G.t.m. per train-hr. excl.locos. and tenders	G.t.m. per train-mi. excl.locos. and tenders	Net ton-mi. per train-mile	Net ton-mi. per l'd. car-mile	Net ton-mi. per car-day	Car miles per car-day	Net daily ton-mi. per road-mi.	Coal lb. per 1000 g.t.m. inc. loco.	Mi. per loco. per day
New England Region:														
Boston & Albany	1944	347	5,789	6,136	0.2	27,075	1,697	723	29.2	621	34.6	10,875	180	86.4
	1943	367	5,597	5,964	0.9	25,854	1,693	724	28.7	678	37.7	10,818	159	91.1
Boston & Maine	1944	2,509	11,173	13,682	3.2	37,214	2,426	1,094	29.6	949	48.1	7,478	93	93.8
	1943	2,406	9,389	11,795	2.7	34,920	2,296	1,029	30.4	1,114	56.7	7,386	92	98.0
N. Y., New H. & Hartf.†	1944	3,351	20,495	23,846	3.5	34,458	2,339	1,023	28.1	732	40.0	9,567	95	93.9
	1943	4,094	20,708	24,802	2.6	32,913	2,296	996	27.3	641	35.6	8,816	92	89.1
Great Lakes Region:														
Delaware & Hudson	1944	3,425	6,125	9,550	2.6	51,212	3,043	1,610	37.8	1,785	71.9	19,747	99	67.3
	1943	5,543	4,469	10,012	2.9	46,658	2,803	1,457	38.3	1,610	66.0	18,360	96	63.6
Del., Lack. & Western	1944	5,859	12,367	18,226	3.0	42,849	2,916	1,387	31.7	915	42.2	17,305	111	91.5
	1943	8,050	11,055	19,105	2.6	44,130	3,194	1,455	31.8	986	49.7	19,867	113	107.7
Erie	1944	10,501	26,386	36,887	2.8	51,197	3,112	1,361	29.0	1,151	60.2	18,902	85	96.4
	1943	11,493	25,599	37,092	2.4	51,469	2,956	1,279	28.8	1,176	63.6	19,390	85	104.2
Grand Trunk Western	1944	3,051	6,806	9,857	4.6	42,033	2,092	900	27.4	765	42.8	7,515	81	121.9
	1943	2,494	7,470	9,964	3.7	44,532	2,106	952	31.0	936	47.2	9,196	81	130.7
Lehigh Valley	1944	7,565	20,954	28,519	2.4	51,628	3,200	1,515	34.7	957	46.3	22,783	101	156.1
	1943	8,687	15,088	23,775	2.1	53,153	3,128	1,467	33.9	986	48.3	18,594	98	141.0
New York Central	1944	49,156	96,200	145,356	3.0	44,125	2,728	1,275	33.1	1,046	50.6	14,640	97	107.3
	1943	51,603	87,204	138,807	3.2	43,969	2,670	1,197	32.5	1,032	53.8	14,276	90	111.0
New York, Chi. & St. L.	1944	2,893	14,740	17,633	2.2	49,968	2,636	1,178	29.7	1,922	98.9	19,743	81	160.8
	1943	4,213	12,937	17,150	2.4	50,014	2,559	1,156	30.1	1,798	92.0	18,721	77	155.4
Pere Marquette	1944	2,713	8,796	11,509	2.9	41,304	2,348	1,108	32.1	1,359	64.5	8,241	83	97.8
	1943	3,880	6,962	10,842	3.1	37,546	2,146	1,006	32.2	1,323	63.5	7,510	81	105.7
Pitts. & Lake Erie	1944	3,724	9,267	12,991	4.2	54,365	3,860	2,301	51.0	585	17.5	32,292	80	82.8
	1943	5,181	8,780	13,961	4.1	49,881	3,667	2,229	52.7	476	13.5	26,645	82	65.8
Wabash	1944	6,395	13,771	20,166	3.1	46,135	2,401	1,084	29.6	1,328	65.6	11,441	98	125.4
	1943	7,779	13,332	21,111	1.3	46,691	2,455	1,126	29.9	1,300	62.6	11,675	95	122.1
Central Eastern Region:														
Baltimore & Ohio	1944	42,212	60,465	102,677	2.9	31,570	2,635	1,319	37.2	1,046	44.9	17,608	134	105.0
	1943	44,651	47,649	92,300	2.9	32,742	2,469	1,190	35.2	1,005	46.3	15,345	132	101.7
Central of New Jersey†	1944	5,540	15,125	20,665	3.0	33,253	2,588	1,293	37.6	478	21.4	15,446	124	94.9
	1943	4,736	17,541	22,277	1.9	27,169	2,261	1,140	35.5	401	17.7	15,012	132	99.8
Chicago & Eastern Ill.	1944	2,272	4,990	7,262	3.7	39,509	2,285	1,034	32.4	1,578	81.7	12,553	104	144.7
	1943	2,388	4,999	7,387	2.8	35,532	2,147	952	31.6	1,224	65.6	10,182	107	129.6
Elgin, Joliet & Eastern	1944	8,917	5,906	14,823	2.7	18,804	2,303	1,268	43.1	362	12.5	13,763	125	88.7
	1943	8,509	5,805	14,314	4.6	18,298	2,191	1,173	42.8	308	11.2	12,016	122	83.2
Long Island	1944	33	4,738	4,771	.8	6,457	836	363	32.9	85	4.7	1,122	304	49.6
	1943	16	3,606	3,622	.4	6,470	817	371	37.1	110	5.5	1,136	301	53.9
Pennsylvania System	1944	126,846	119,910	246,756	3.4	39,689	2,911	1,417	35.5	887	40.1	22,357	116	103.1
	1943	127,217	119,420	246,637	2.9	38,587	2,781	1,295	34.5	822	40.3	20,227	111	105.3
Reading	1944	12,204	22,974	35,178	1.7	30,876	2,412	1,304	41.1	729	27.6	17,894	117	85.4
	1943	12,572	21,600	34,172	2.1	30,384	2,375	1,232	40.1	633	26.0	15,709	115	77.5
Pocahontas Region:														
Chesapeake & Ohio	1944	36,718	17,216	53,934	1.2	59,857	4,148	2,382	50.2	1,580	55.4	29,134	72	92.4
	1943	42,098	13,372	55,470	1.1	54,348	3,747	2,089	47.5	1,170	43.6	20,447	72	73.0
Norfolk & Western	1944	31,159	8,718	39,877	1.7	65,985	4,120	2,229	46.5	1,562	56.9	27,910	81	98.3
	1943	38,123	6,935	45,058	1.8	56,690	3,603	1,901	45.0	1,066	41.4	20,856	89	84.4
Southern Region:														
Atlantic Coast Line	1944	7,960	17,734	25,694	2.4	30,628	1,816	814	30.4	1,024	53.1	5,546	102	90.8
	1943	8,066	19,167	27,233	3.1	29,856	1,821	798	29.4	951	51.5	5,594	103	97.4
Central of Georgia†	1944	1,855	6,548	8,403	1.5	30,046	1,578	713	30.6	1,004	50.5	4,949	121	130.6
	1943	2,913	6,048	8,961	1.2	27,955	1,520	683	29.7	833	40.7	4,175	116	106.1
Gulf, Mobile & Ohio	1944	2,091	7,449	9,540	1.0	40,533	2,348	1,144	31.9	1,208	52.4	5,971	108	112.3
	1943	2,805	6,399	9,204	1.0	38,366	2,132	1,013	32.4	1,158	53.9	5,734	110	116.6
Illinois Central (incl. Yazoo & Miss. Vy.)	1944	18,729	34,521	53,250	1.0	44,210	2,747	1,289	32.5	1,316	63.4	11,029	109	85.7
	1943	20,594	32,630	53,224	.9	44,017	2,788	1,276	33.2	1,375	69.3	11,687	101	93.5
Louisville & Nashville	1944	31,466	15,065	46,531	3.5	29,873	1,887	951	36.6	1,089	47.6	10,718	120	125.5
	1943	36,535	15,366	51,901	1.9	26,804	1,715	829	34.9	816	38.0	8,897	131	122.6
Seaboard Air Line*	1944	6,535	16,533	23,068	2.1	31,912	1,861	835	29.8	1,039	51.9	5,942	126	112.4
	1943	6,741	16,115	22,856	1.7	28,827	1,789	815	30.5	1,028	50.1	6,028	113	118.3
Southern	1944	16,988	32,560	49,548	2.3	25,497	1,486	690	30.3	987	47.9	7,581	139	114.4
	1943	16,535	27,923	44,458	1.8	25,129	1,415	644	29.0	933	46.5	6,468	138	105.8
Northwestern Region:														
Chi. & North Western	1944	23,102	31,811	54,913	3.5	34,386	2,292	1,045	31.0	627	29.6	4,169	113	78.4
	1943	19,713	25,052	44,765	4.5	34,675	2,255	1,049	32.5	742	35.2	4,251	110	78.0
Chicago Great Western	1944	1,178	4,688	5,866	1.9	35,397	2,098	969	29.8	1,559	72.0	6,070	118	121.9
	1943	1,328	3,926	5,254	1.8	36,164	2,065	947	30.5	1,665	77.5	6,006	114	127.3
Chi., Milw., St. P. & Pac.†	1944	25,558	31,022	56,580	1.7	35,598	2,281	1,107	32.3	955	42.3	5,054	116	96.2
	1943	28,194	24,233	52,427	1.6	35,155	2,202	1,036	31.9	996	46.4	4,876	114	99.0
Chi., St. P., Minneap. & Om.	1944	957	6,750	7,707	5.5	25,706	1,872	879	31.9	744	33.6	3,506	101	58.8
	1943	1,166	5,973	7,139	8.4	25,544	1,769	812	31.2	741	35.0	3,298	105	58.5
Duluth, Missabe & I. R.	1944	15,065	322	15,387	2.6	90,145	5,312	3,261	57.5	1,179	40.5	33,261	58	121.7
	1943	14,535	349	14,884	1.7	83,994	5,209	3,197	56.7	1,162	40.0	31,737	56	106.9
Great Northern	1944	25,733	16,633	42,366	2.2	45,436	2,954	1,554	37.9	1,374	52.2	7,386	87	94.6
	1943	27,855	16,972	44,827	2.7	45,499	2,955	1,553	38.6	1,351	51.0	7,705	85	96.7
Min., St. P. & S. St. M.†	1944	6,834	6,344	13,178	2.9	33,777	1,959	959	33.5	1,035	45.8	3,211	85	112.6
	1943	8,094	5,137	13,231	4.5	32,583	1,919	930	34.0	984	44.4	3,048	84	108.4
Northern Pacific	1944	17,911	17,337	35,248	3.5	43,533	2,799	1,456	34.3	1,232	46.8	6,421	116	82.9
	1943	22,502	14,372	36,874	3.6	40,713	2,642	1,358	34.0	1,183	46.1	6,509	128	89.1
Central Western Region:														
Alton†	1944	1,541	7,249	8,790	2.8	40,319	1,853	895	33.5	905	40.9	8,176	116	122.2
	1943	1,502	7,439	8,941	3.3	40,040	1,884	1,035	37.3	1,003	39.6	9,328	107	117.6
Atch., Top. & S. Fe (incl. G. C. & S. F. & P. & S. F.)	1944	45,744	53,603	99,347	2.9	44,793	2,535	975	26.0	1,183	70.5	8,612	103	142.3
	1943	52,090	46,248	98,338	3.1	38,970	2,339	905	27.2	931	54.5	6,942	112	133.9
Chi., Burl. & Quincy	1944	16,662	26,636	43,298	2.7	40,748	2,647	1,276	33.5	1,363	60.9	6,640	107	99.3
	1943	19,030	25,466	44,496	2.5	38,427	2,428	1,147	32.8	1,213	56.0	5,850	97	94.5
Chi. Rock I. & Pac.†	1944	12,658	23,091	35,749	3.7	34,874	2,044	883	29.4	1,143	61.4	5,231	107	107.9
	1943	14,286	20,295	34,581	4.3	33,290	1,963	858	29.7	1,314	68.7	5,731	112	122.7
Denver & R. G. Wn.†	1944	8,251	6,183	14,434	3.5	35,433	2,251	1,111	30.8	1,030	43.4	6,251	158	87.0
	1943	8,830	8,424	17,254	2.9	32,244	2,295	1,116	31.9	947	41.3	6,859	165	95.6
Southern Pacific—Pac. Lines	1944	24,564	55,998	80,562	2.3	39,583	2,784	1,166	27.0	1,102	59.0	10,771	97	110.1
	1943	27,019	58,948	85,967	2.1	37,311	2,766	1,148	27.9	1,080	58.6	11,075	97	115.1
Union Pacific	1944	30,091	36,876	66,967	2.7	48,751	2,553	1,224	30.1	1,588	70.9	10,772	117	119.0
	1943	32,427	40,138	72,565	2.6	43,230	2,334	1,028	29.3	1,438	73.6	10,384	125	134.4
Southwestern Region:														
Mo.-Kans.-Texas Lines	1944	1,809	8,946	10,755	.4	33,770	1,900	830	30.3	2,348	131.7	7,705	78	196.2
	1943	2,835	8,875	11,710	.8	28,544	1,781	793	30.4	1,504	79.1	5,461	85	144.1
Missouri Pacific†	1944	12,898	29,575	42,473	1.5	41,165	2,435	1,110	31.2	1,439	71.4	8,766	99	116.1
	1943	11,703	36,227	47,930	1.5	35,571	2,259	1,038	31.8	1,247	60.2	8,502	109	121.2
Texas & Pacific	1944	1,513	7,335	8,848	1.8	42,401	2,220	901	26.9	1,550	87.9	6,649	86	99.2
	1943	1,868	6,227	8,095	1.3	39,237	2,107	870	27.3	1,429	73.9	6,277	92	108.8
St. Louis-San Francisco†	1944	7,935	13,061	20,996	1.8	32,770	1,696	755	31.1	1,360	70.9	5,950	123	119.8
	1943	8,906	14,079	22,985	2.6	31,313	1,761	794	31.5	1,254	63.7	6,464	123	125.7
St. Louis-San Fran. & Texas	1944	....	389	389	10.3	22,323	1,075	444	28.0	1,632	91.2	3,366	115	141.3
	1943	....	340	340	11.8	20,969	1,092	476	28.6	1,724	88.9	3,601	125	116.1
St. Louis Southw. Lines†	1944	1,134	6,883	8,017	1.6	36,376	2,188	946	27.1	2,122	112.7	11,006	75	137.5
	1943	1,430	7,988	9,418	.9	31,369	2,147	894	27.8	1,598	92.0	9,955	80	139.2
Texas & New Orleans	1944	3,872	18,629	22,501	2.9	33,059	1,825	814	29.4	1,304	66.2	6,832	85	140.9
	1943	4,553	22,009	26,562	2.1	32,304	1,880	816	30.3	1,209	64.0	7,320	85	156.5

† Report of trustee or trustees.

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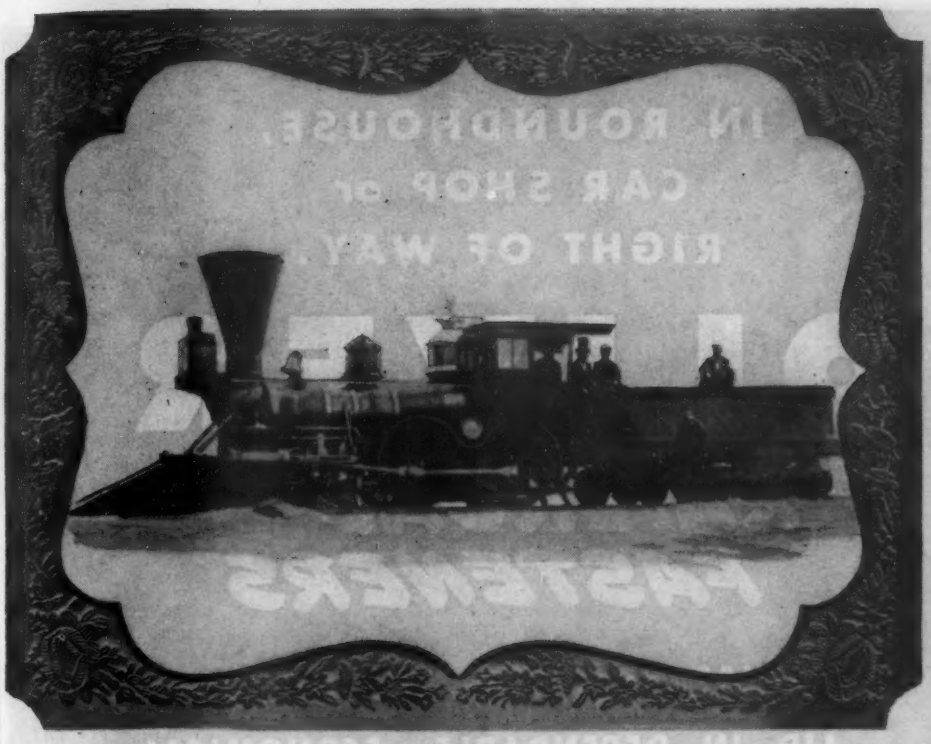
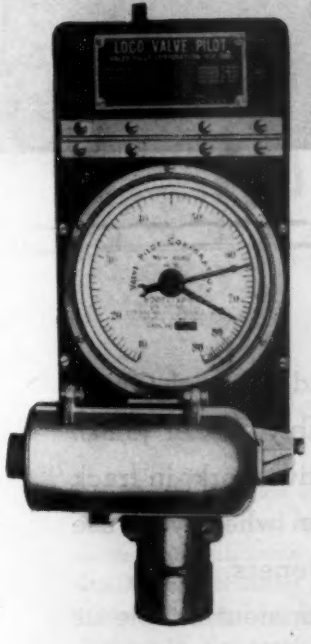


Then *and* Now

1860



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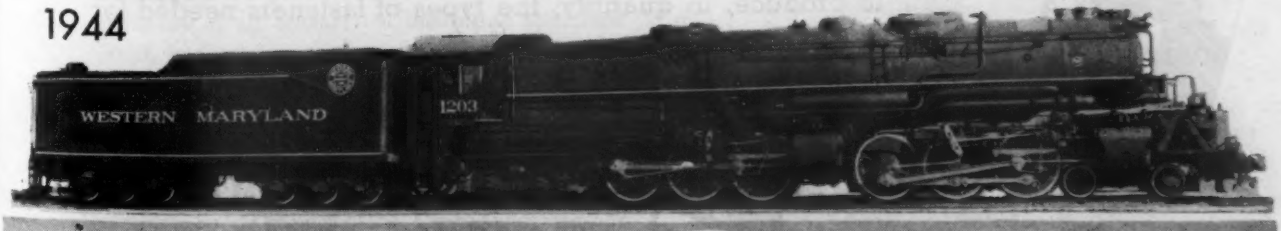

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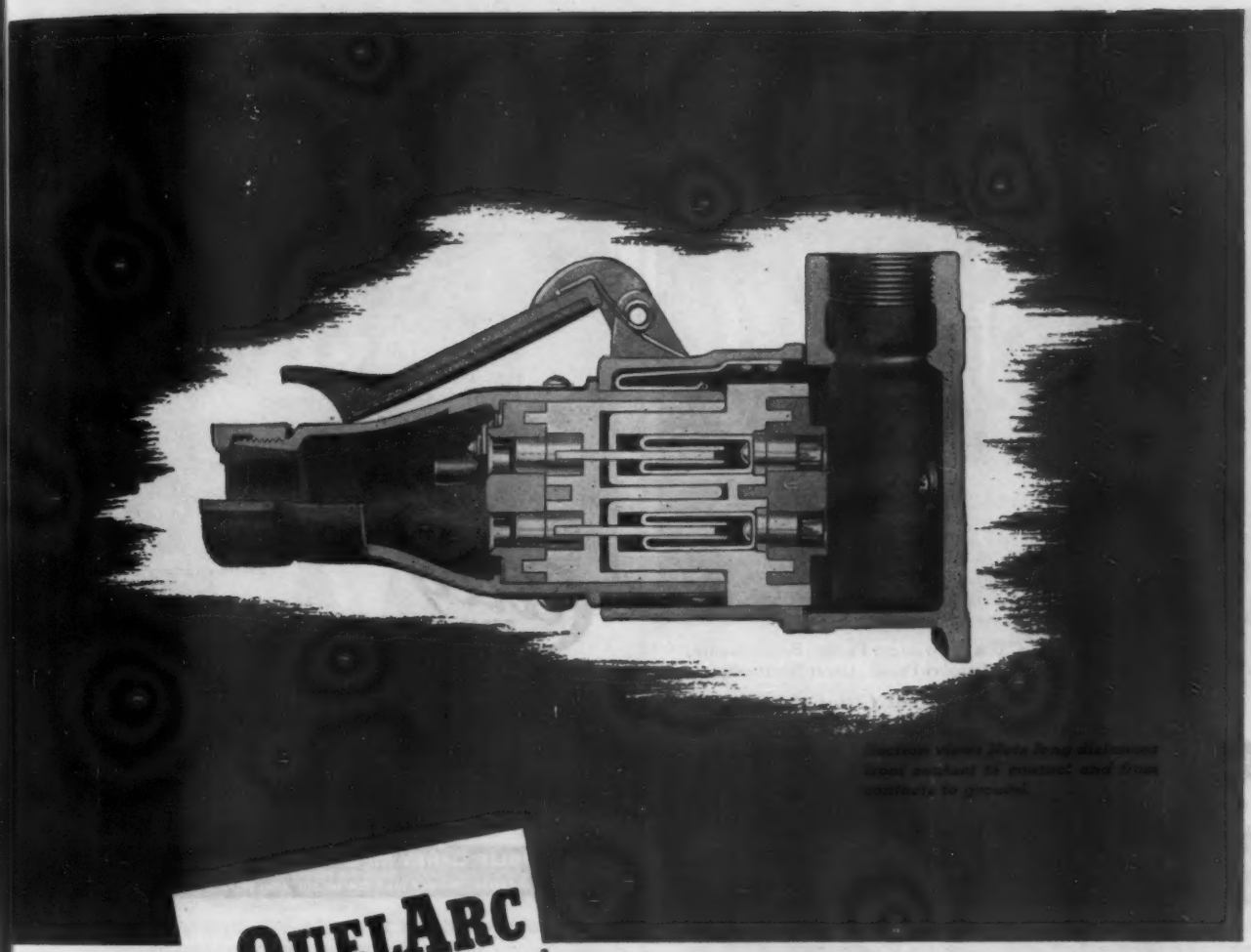

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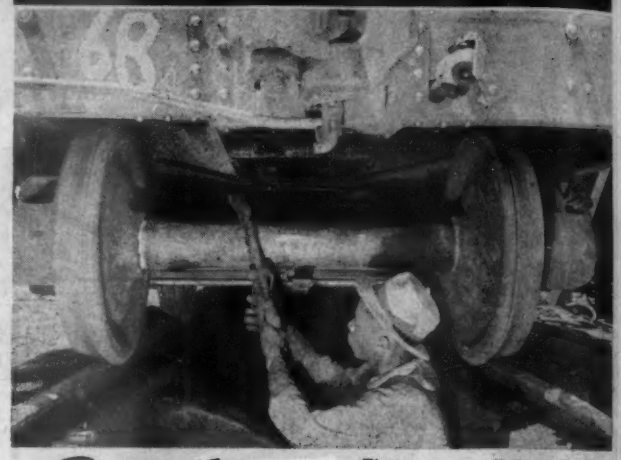

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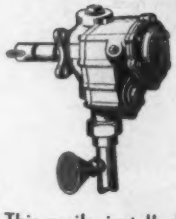

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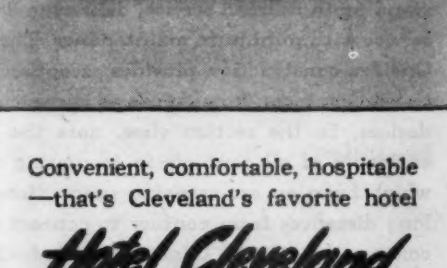

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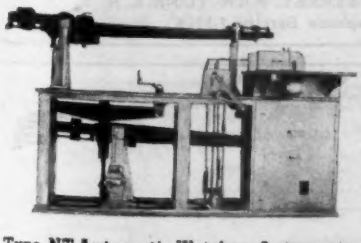

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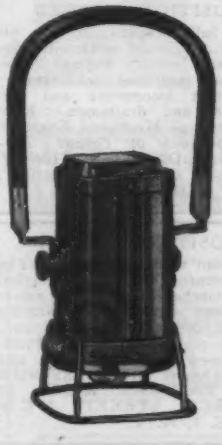

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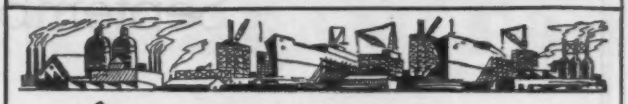

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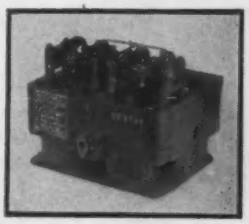

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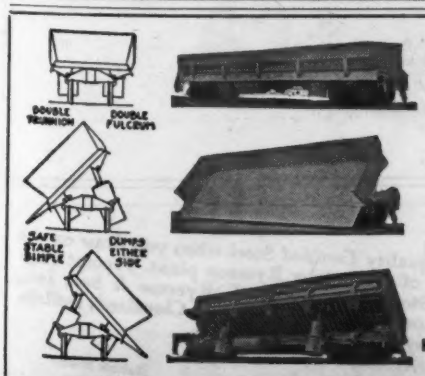

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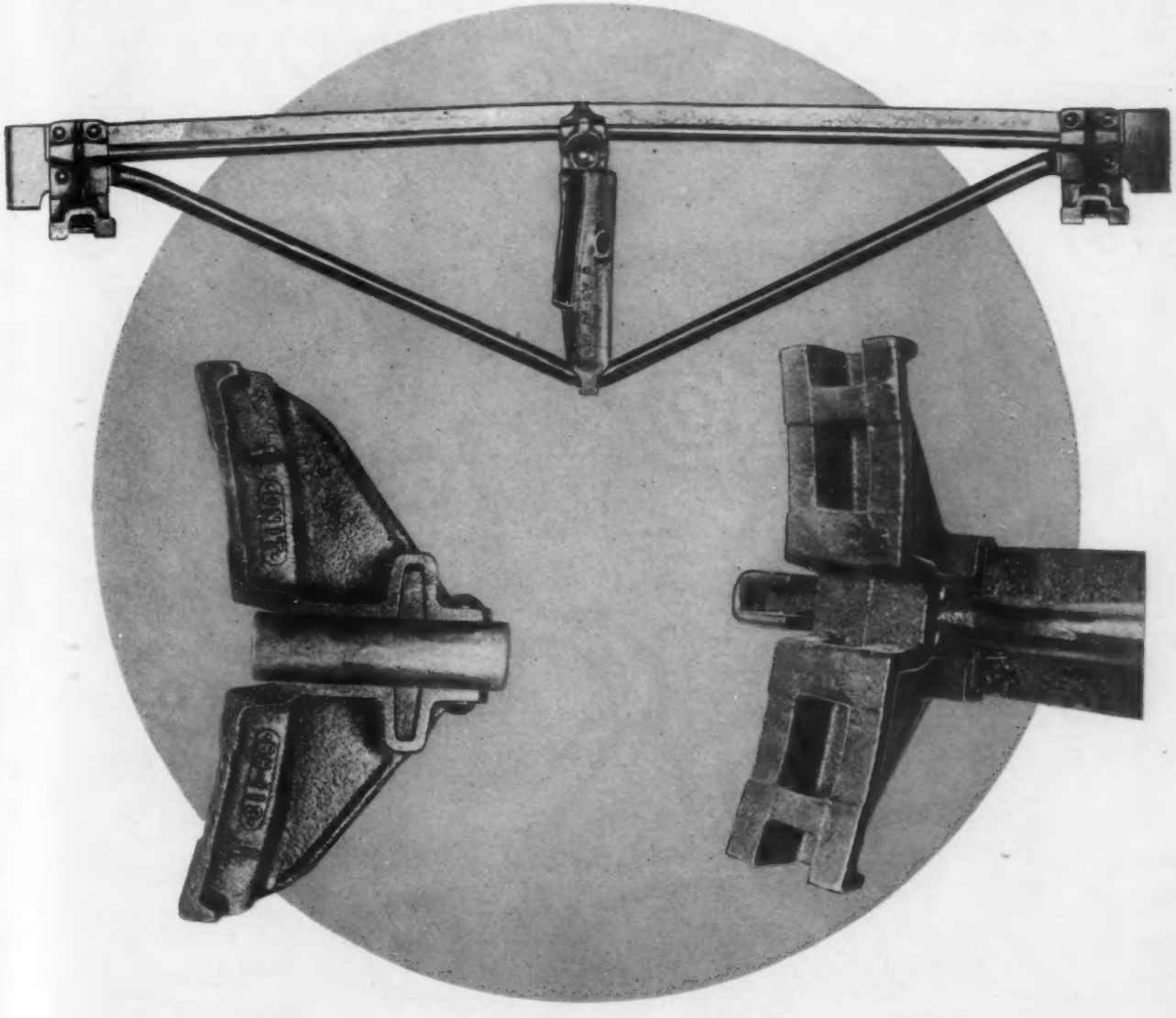

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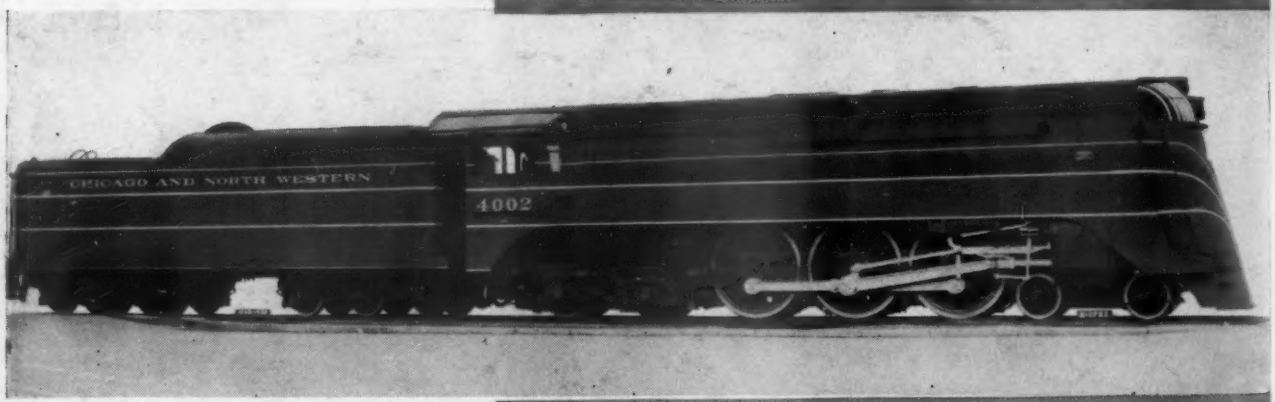

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